

Afrotropical Asilidae (Diptera) 17. The genus *Damalis* Fabricius, 1805 in subsaharan Africa (Trigonimiminae : Damalini)

by

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ABSTRACT

African species of the genus *Damalis* Fabricius, 1805 (= *Xenomyza* Wiedemann, 1817) are reviewed and a key for their identification supplied. Of the 30 known species 12 are described as new.

New species: *achilles*, *angola*, *chelomakolon*, *doryphorus*, *drilus*, *furcula*, *knysna*, *monochaetes*, *neavei*, *sphekodes*, *turneri*, *xaniomerus*.

New synonyms: *Xenomyza* Wiedemann, 1817 & *Icariomima* Enderlein, 1914 = *Damalis* Fabricius, 1805; *Discocephala debilis* Karsch, 1887 = *Stichopogon punctus* Loew, 1851; *Xenomyza amphora* Oldroyd, 1970 = *Icariomima coeruleiventris* Enderlein, 1914; *Lophurodamalis natalensis* Curran, 1934 = *Damalis hirtiventris* Macquart, 1846; *Damalis pallinota* Hermann, 1926 & *Xenomyza taciturna* Oldroyd, 1970 = *Damalis pollinosa* Ricardo, 1925; *Damalis brauni* Speiser, 1924 = *Damalis venustus* Bertoloni, 1861.

New combinations: The following species, described in *Xenomyza*, are here referred to *Damalis*: *beta* Oldroyd, 1960; *complecta* Oldroyd, 1968; *crypta* Oldroyd, 1960; *dimidiata* Oldroyd, 1960; *poseidon* Oldroyd, 1970; *quasimodo* Oldroyd, 1960; *scutellata* Oldroyd, 1970. *Icariomima coeruleiventris* Enderlein, 1914 is also transferred to *Damalis*.

Revised status: The following species, most of which had been described in *Damalis* and subsequently transferred to *Xenomyza*, revert to *Damalis*: *annulata* Loew, 1858; *clavigera* Bromley, 1942; *conspicua* Curran, 1934 (reinstated tentative synonym of *heterocera* Wiedemann, 1821); *cylindrica* Hull, 1967; *elongata* Hull, 1962; *femoralis* Ricardo, 1925; *heterocera* Wiedemann, 1821 (described as *Dioctria*); *hirtiventris* Macquart, 1846; *hyalipennis* Macquart, 1846; *longipennis* Loew, 1858; *pollinosa* Ricardo, 1925 (reinstated synonym of *pallinota* Hermann, 1926); *pulchella* Bromley, 1952; *simplex* Curran, 1934; *speciosa* Loew, 1858; *venustus* Bertoloni, 1861.

INTRODUCTION

Damalis Fabricius, 1805 belongs to the subfamily Trigonimiminae. Sometimes referred to as “goggle-eyed flies” members of this group are distinguished by the reduction of frons and face and anteroposteral flattening of the head into a disc in which the eyes are large and prominent (Fig. 1). Oldroyd (1980) lists five Afrotropical genera in the tribe; *Icariomima* Enderlein (here to be synonymised with *Damalis*), *Oligopogon* Loew, *Oxynoton* Janssens, *Rhipidocephala* Hermann and *Xenomyza* Wiedemann (now a synonym of *Damalis*). *Damalis* is separated from the other genera by possession of a small third antennal segment, which has a long aetose arista, and a closed and stalked anal cell (a_1).

Damalis is found in four of the six major zoogeographical regions. With this study the number of Afrotropical species is raised to 35. Forty Oriental species are recognised (Oldroyd 1975, Joseph & Parui 1984). While only two species are recorded with certainty from the Palearctic region a third (from Egypt & Arabia) has been listed as a doubtful species (Lehr, 1988). As far as I am aware there is only one species, *D. fuscipennis* Macquart, recorded from the Australian region.

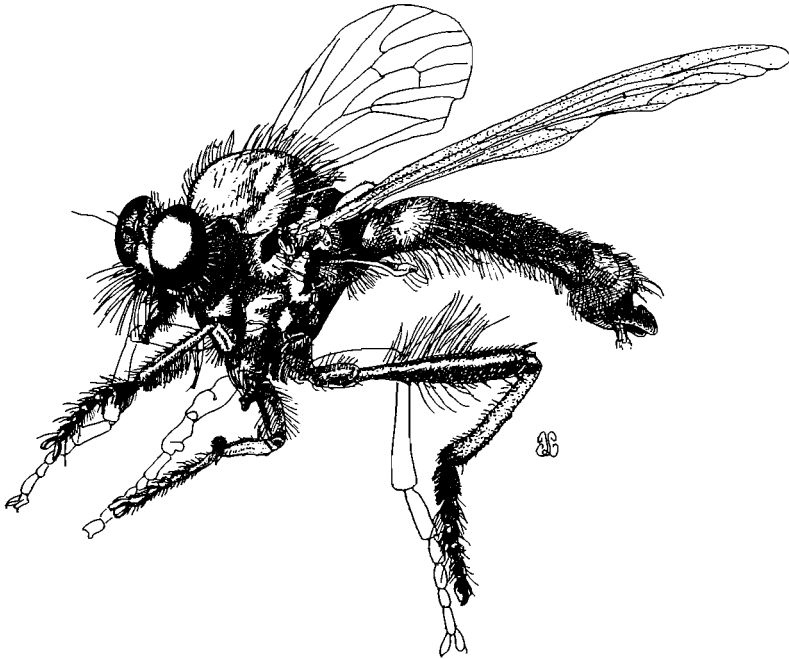


Fig. 1. *Damalis monochaetes* sp. n., entire male

HISTORICAL PERSPECTIVE

The following historical perspective relates only to taxa which I recognise as belonging to the concept of *Damalis* as used in this review. Other taxa requiring discussion will be dealt with elsewhere in this paper.

Fabricius (1805) — erected the genus *Damalis* for four newly described species (*curvipes*, *planiceps*, *myops*, *quadricinctus*). The generic history that followed is reviewed by Smith & Chvala (1982).

Wiedemann (1821) — described the first Afrotropical *Damalis* species (*heterocera* and *anomalus*). Although the genus *Damalis* was available, as was his own (1817) genus *Xenomyza*, he placed these two species in *Dioctria* and *Dasygogon* respectively.

Weidemann (1828) — added *Damalis capensis* to the Afrotropical fauna, inexplicably placing both his 1821 species as synonyms of *capensis*. I assume that this was his way of rectifying his earlier generic misplacement of these species.

Macquart (1846) — described two species (*hirtiventris* and *hyalipennis*), providing illustrations of the head and antenna of the latter (although these suggest that it was *hirtiventris* that was figured).

Walker (1854) — described *imbuta* in the genus *Discocephala* Macquart, 1838.

Loew (1858a) — provided brief descriptions of four species (*hirtiventris*, *capensis*, *speciosa*, *longipennis*), the latter two being new. He also correctly synonymised Walker's *imbuta* with *hirtiventris*.

- Loew (1858*b*)—added another new species (*annulata*).
- Loew (1860)—repeated the information contained in his two 1858 papers.
- Bertoloni (1861)—produced a brief diagnosis of one new species (*venustus*).
- Bertoloni (1862)—provided a full description of *venustus*.
- Schiner (1866)—apparently unaware of Bertoloni's work provided a list of all species (19 valid names and 3 synonyms) of *Damalis* known to him. He included six Afrotropical species (*capensis*, *hyalipennis*, *hirtiventris*, *annulata*, *longipennis*, *speciosa*) and repeated previous synonymies (ie. *heterocera* and *anomalus* = *capensis*; *imbuta* = *hirtiventris*).
- Kertész (1909)—produced his useful catalogue which includes seven Afrotropical *Damalis* species (*annulatus*, *heterocerus*, *hirtiventris*, *hyalipennis*, *longipennis*, *speciosus*, *venustus*). He corrected the misallocations made by Wiedemann (1828) by listing *anomalus* and *capensis* as synonyms of *heterocerus*.
- Enderlein (1914)—described the genus *Icariomima* (now considered a synonym of *Damalis*) for his newly described species *coeruleiventris*.
- Speiser (1924)—described a single new species (*brauni*).
- Ricardo (1925)—described two new species (*femoralis* and *pollinosa*). She noted that *pollinosa* was a species mentioned by Hermann (*in litt.*); see next entry.
- Hermann (1926)—described two new species (*pallinota* and *maxima*), the former being the same species as that named *pollinosa* by Ricardo (1925). Hermann described 2 new genera: *Lasiodamalis* (with *annulata* as type-species) and *Lophurodamalis* (with *hirtiventris* as type-species and including *speciosa*).
- Curran (1934)—accepted Hermann's generic classification. He provided a key for the separation of the four species included in *Lophurodamalis* (*speciosa*, *hirtiventris* and two new species, *natalensis* and *simplex*) and the six species included in *Damalis* (*femoralis*, *maxima*, *pollinaria* — a presumed misspelling of *pallinota*, *hyalipennis*, *pollinosa* and new species *conspicua*).
- Engel & Cuthbertson (1934)—provided brief notes on Zimbabwe species.
- Cuthbertson (1938)—provided some interesting biological observations on Zimbabwe species.
- Bromley (1942)—described the first species from Madagascar (*clavigera*).
- Bromley (1952)—added another new species from southern Africa (*pulchella*).
- Lindner (1955)—listed material of *pollinosa* from Tanzania, creating a *nomen nudum* and not a homonym as indicated later by Oldroyd (1980).
- Oldroyd (1960)—using *Xenomyza*, described four new species from Madagascar (*beta*, *crypta*, *dimidiata*, *quasimodo*).
- Hull (1962)—attempted to stabilise the generic classification by retaining *Damalis* in the Asilidae. He listed 12 species as being Afrotropical (*annulata*, *cinctipes*, *clavigerus*, *conspicua*, *femoralis*, *hyalipennis*, *longipennis*, *maxima*, *pallinota*, *pollinosa*, *venustus* and a new species *elongatus*). He also split the genus into subgenera (*Protodamalis* and *Zygocolon* being described as new subgenera) with *elongatus* as type-species of *Protodamalis* (all other Afrotropical species being presumably placed in the nominal subgenus). Species listed in *Lasio-*

damalis were *capensis* and *heterocerus* (with *anomalus* as a synonym) — why he chose to retain *capensis* is not stated. Under *Lophurodamalis* he listed those mentioned by Curran and *fervida* (see under section headed 'Species not dealt with in this study').

Hull (1967)—without explanation used the genus-group names *Lasiodamalis* and *Lophurodamalis* subgenerically (without reference to his own 1962 subgeneric arrangement), gives a new record for *D. (Lophurodamalis) femoralis*, and describes as new *D. (Lasiodamalis) cylindrica*.

Oldroyd (1968)—persisting with his use of *Xenomyza* described a new species (*complecta*) from West Africa.

Oldroyd (1970)—described four new species (*taciturna*, *amphora*, *poseidon*, *scutellata*) from the Congo Basin (all placed in *Xenomyza*).

Papavero (1973)—in presenting a preliminary classification of the Asilidae in subfamilies, placed *Damalis* in the subfamily Trigonimiminae, an action which has been largely ignored by all subsequent workers. He also listed the following synonyms of *Damalis* — *Xenomyza*, *Chalcidimorpha*, *Discodamalis*, *Lasiodamalis*, *Lophurodamalis*, *Aireina*, *Protodamalis*, *Zygocolon*.

Oldroyd (1974)—persisting with the use of *Xenomyza* also lists Hull's and Hermann's genera and subgenera in the synonymy of the genus. He provides a key to 10 South African species indicating the following synonyms: *maxima* = *pallinota*; *capensis*, *anomala*, ? *conspicua* = *heterocerus*; ? *cylindrica* = *simplex*.

Theodor (1976)—described and illustrated the male genitalia of *femoralis* and *taciturna* (as *Damalis*).

Oldroyd (1980)—repeating his 1974 generic classification, listed all Afrotropical species (27) recorded in the literature including the following synonyms: *anomalus*, *capensis*, ? *conspicua* = *heterocera*; *imbuta* = *hirtiventris*; *maxima* = *pallinota*. He does not list ? *cylindrica* = *simplex* as in 1974 so presumably changed his mind. He also erroneously gives *pollinosa* Ricardo, 1925 as an 'incorrect subsequent spelling' of *pallinota* Hermann, 1926.

Smith & Chvala (1982)—reviewed the history of *Damalis* and requested the International Commission for Zoological Nomenclature to suppress the type-species designation of Westwood (1835), which placed *Damalis* in the family Empididae, in favour of Hull's (1962) designation which placed the genus in the Asilidae.

Opinion 1342 (1985)—was unanimously in favour of the Smith & Chvala proposal.

Although this historical perspective includes all Afrotropical species, the present review excludes the five Madagascan species as these have been dealt with adequately by Oldroyd (1960).

MATERIALS AND METHODS

Every effort was made to examine all previously recorded material, especially types, and as much other material as was practicable. Museums and collections which provided specimens for study are listed below, together with the abbrevia-

tions which have been used throughout this paper. The names of the people who kindly assisted me with loans are given in parentheses. My thanks are extended to all these people without whose help this study would not have been possible.

- AM = Albany Museum, Grahamstown, South Africa (Dr F. W. Gess).
- AMNH = American Museum of Natural History, New York, U.S.A. (Dr D. Grimaldi).
- BM = British Museum (Natural History), London, U.K. (Mr J. Chainey).
- CAS = California Academy of Sciences, San Francisco, U.S.A. (Dr N. D. Penny).
- DM = Durban Natural History Museum, Durban, South Africa (Mr C. Quickelberge).
- IZB = Istituto di Zoologia, University di Bologna, Bologna, Italy (Prof. M. Marini).
- KMT = Koninklijk Museum Voor Midden-Africa, Tervuren, Belgium (Dr E. de Coninck).
- MNP = Muséum National D'Histoire Naturelle, Paris, France (Dr L. Tsacas).
- NCI = National Collection of Insects, Pretoria, South Africa (Dr M. Mansell).
- NM = Natal Museum, Pietermaritzburg, South Africa.
- NMOW = National Museum of Wales, Cardiff, Wales, U.K. (Dr J. C. Deeming).
- NMZ = Natural History Museum of Zimbabwe, Bulawayo, Zimbabwe (Miss R. Nyandoro).
- SAM = South African Museum, Cape Town, South Africa (Dr V. B. Whitehead).
- SIW = Smithsonian Institution, Washington, U.S.A. (Dr G. F. Hevel).
- SMS = Staatliches Museum für Naturkunde Stuttgart, Stuttgart, West Germany (Dr H-P. Tschorsnig).
- SMW = State Museum, Windhoek, Namibia (Mr J. Irish).
- ZMB = Zoologisches Museum, Berlin, East Germany (Dr H. Schumann).
- ZMC = Zoologisk Museum, Copenhagen, Denmark (Dr L. Lyneborg).
- ZML = Zoological Museum, Lund, Sweden (Dr R. Danielsson).
- ZSM = Zoologische Staatssammlung, Munchen, West Germany (Dr W. Schacht).

Preparation of specimens for study

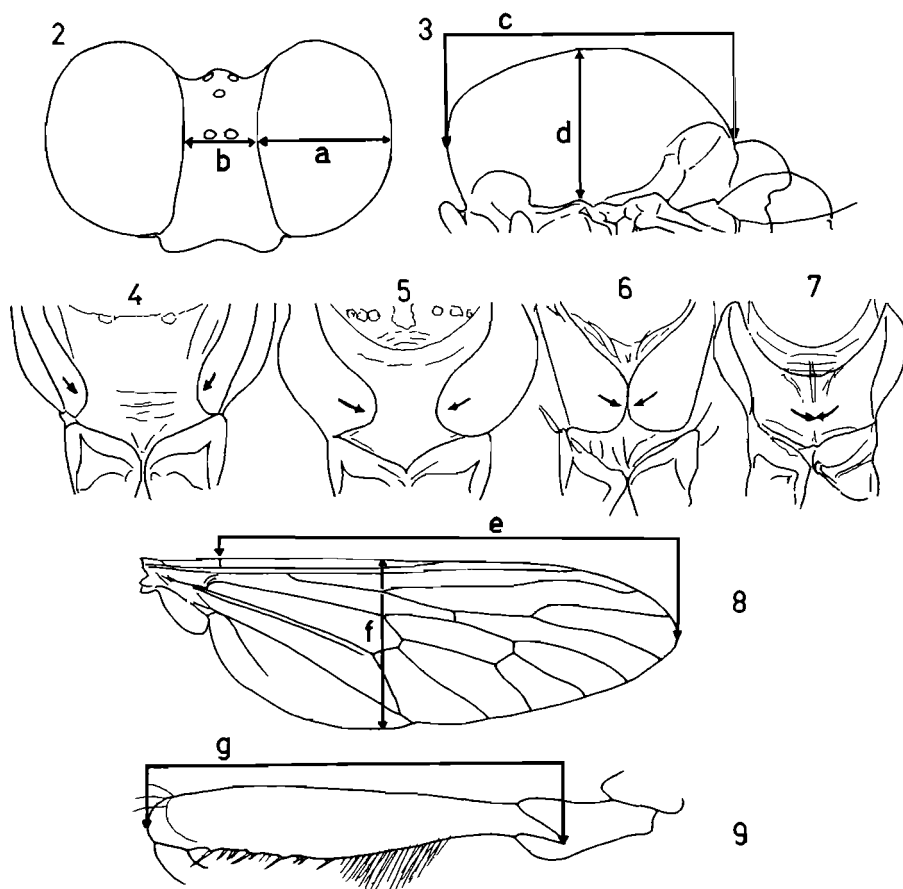
In all instances specimens were dry-mounted on pins. Wings were sometimes removed for photography. If this was done the right wing was chosen provided it was in good condition. The wing was snapped off at its base using a pair of fine forceps, photographed (using a Wild photomicroscope—transmitted light) and reattached to the specimen with a droplet of clear nail-varnish.

Male genitalia are important for species discrimination, and detailed drawings (using a drawing-tube attached to a Wild M5 stereomicroscope) were executed after first removing the terminal segments of the abdomen and clearing them in hot potassium hydroxide. Genitalia so treated were stored temporarily in small plastic

vials containing a mixture of ethanol and glycerine, until completion of the study when they were permanently mounted in Canada Balsam on small strips of transparent cellulose. Each cellulose strip was then pinned below the appropriate specimen.

Preparation of descriptions

During preliminary examination of a number of different species of *Damalis*, potentially useful features were identified. A standard form was devised and completed for each holotype (or other main reference specimen) studied. This information facilitated both inter- and intraspecific comparisons and formed the basic data from which final descriptions were prepared. The following anatomical information was recorded (terminology follows McAlpine (1981)).



Figs 2-9. Anatomical and morphometric characters in *Damalis*. 2. Measurements made in the calculation of eye width (a): face width (b) ratio. 3. Measurements taken in the calculation of length (c): height (d) ratio of scutum. 4-7. Four states in the development of a complete postmetacoxal bridge. 4. Postmetacoxal area entirely membranous, posterior margins of metepimera extended very slightly posteromedially. 5. Posterior margins of metepimera extended posteromedially but do not touch. 6. Metepimera extended posteromedially to the point where they touch but are not fused together to form a complete bridge. 7. Postmetacoxal bridge complete. 8. Wing measurements taken—length (e), breadth (f). 9. Measurement of metathoracic femur length (g).

Head: General ground colour and colour of pruinosity; colour of antennal setation; development of scape (noting in particular the presence of ventral and/or dorsal protuberances); placement of antennal bases; width of eye : width of face ratio (measured as in Fig. 2); development of face, noting in particular any protruding or depressed areas; distribution of facial pruinosity; distribution of pruinescence of frons and vertex; mystacial colour; number of major mystacial setae (bristles); distribution of bristles; palp colour; palp development (noting in particular swollen or bulbous conditions); any other feature of note.

Thorax: Ground colour of scutum (sct) and colour of scutal pruinosity, noting in particular any patterns formed by shiny apruinose areas and pruinosity of postpronotal lobe (pprn lb) and postalar callus (pal cal); colour and location of major scutal setae (standard chaetotaxic abbreviations are used: notopleurals—npl, supraalars—sal, postalars—pal, acrostichals—acr, dorsocentrals—dc); colour and number of scutellar marginal setae (sctl s); distribution of pruinescence on scutellum (sctl); length : height ratio of scutum (measured as in Fig. 3); condition of postmetacoxal area (4 states in the development of a complete postmetacoxal bridge have been identified—Figs 4–7); colour and pruinosity of pleura (noting in particular any apruinose areas on anepisternum (anepst) and anepimeron (anepm)); wing length and breadth (measured in mm as shown in Fig. 8); distribution of wing microtrichia (usually recorded photographically); venational peculiarities (in particular the shape of R_{2+3}) and membrane staining (also usually recorded photographically); halter colour; overall colour of legs; adaptations of mesothoracic leg (noting in particular any processes); length of metathoracic femur (fem 3) (measured in mm as shown in Fig. 9); form of metathoracic femur (represented by a line drawing showing femur shape and position of major setae); any other feature of note.

Abdomen: Tergal ground colour; colour and distribution of tergal setae and pruinescence (tergum 3 (T3) used when tergal variation was evident); any other feature of note; male genitalia (represented by a series of line drawings); standard terminology includes epandrium (epand), hypandrium (hypd), gonocoxite (goncx), aedeagus (aed), hypoproct (hyprct). It should be noted that the ♂ genitalia are rotated through 180° in mature specimens and that statements regarding the positioning of structures relate to the genitalia as seen in this rotated position (ie. the epandrium is ventrally situated).

Descriptions given in this paper usually pertain to the holotype (or lectotype). If the type is female and sexual dimorphism occurs, a description of the male is also given.

Scale lines given with illustrations all represent one millimetre.

Recording of sexual dimorphism and morphological variation

Any specific comments regarding sexual dimorphism or intraspecific variation not noted in the formal descriptions follow immediately after the description.

Recording of material examined

An attempt has been made to adopt a standard method for the recording of material examined. The following information (in the order given here) is

recorded, if available, for each specimen or topotypic series: number and sexes of specimens (? denotes specimen lacks genitalia and cannot be adequately sexed); type status (if appropriate); place of capture (exactly as cited on label); quarter-degree grid reference or co-ordinates (without brackets if cited on label); date of collection (month given in roman numerals even if this is not the method used on the actual label); name of collector (first name or initials usually excluded except for types); any additional information cited on the label (ie. altitude, collecting method, environmental information etc); acronym of repository (in brackets), if two or more repositories, the more important one is given first. Additional information provided, that is not recorded on labels, is placed in square brackets. Country names are listed alphabetically. Localities are arranged in a more or less north to south and east to west order (except for the few localities north of the equator) to facilitate plotting.

Comment on general distribution

A brief comment on the distribution of each species follows the list of material examined. This information is also summarised in Table 1. In a few instances (when sufficient information is available, or when a particular point requires to be made) distribution maps are provided.

Recording of biological information

Biological information, when known, is given after the brief comment on distribution. This usually takes the form of a list of identified prey items. Prey are usually identified to family level only (? denotes family not known) except when other information is available.

Brief statement of relationship to other species

The most closely related (morphologically similar) species are named in each case, in order to promote comparisons.

TAXONOMY

Damalis Fabricius, 1805

Damalis Fabricius, 1805: 147. Type-species: *Damalis planiceps* Fabricius, 1805, by Opinion 1342 (1985: 264).

Xenomyza Wiedemann, 1817: 60. Type-species: *Damalis planiceps* Fabricius, 1805, by designation of Coquillett (1910: 620). **Syn. n.**

Chalcidimorpha Westwood, 1835: 684. Type-species: *Chalcidimorpha fulvipes* Westwood, 1835, by monotypy.

Icariomima Enderlein, 1914. Type-species: *Icariomima coeruleiventris* Enderlein, 1914, by original designation. **Syn. n.**

Lasiodamalis Hermann, 1926: 186. Type-species: *Damalis capensis* Wiedemann, 1928 = *Dioctria heterocera* Wiedemann, 1821 by original designation.

Lophurodamalis Hermann, 1926: 188. Type-species: *Damalis hirtiventris* Macquart, 1846, by original designation.

Aireina Frey, 1934: 312. Type-species: *Aireina paradoxa* Frey, 1934, by original designation.

Protodamalis Hull, 1962: 55. Type-species: *Protodamalis elongatus* Hull, 1962, by original designation.

Zygocolon Hull, 1962: 56. Type-species: *Zygocolon compactus* Hull, 1962, by original designation.

The status of *Damalis* Fabricius

After an interesting but somewhat confusing history the genus *Damalis* Fabricius, 1805 has now been formally placed in the Asilidae (Opinion, 1985). The

motivation for this action was proposed by Smith & Chvala (1982) and a brief summary of their paper is useful here.

Fabricius (1805) erected the genus *Damalis* for four newly described species (*curvipes*, *planiceps*, *quadricinctus* and *myops*). Wiedemann (1828) found the first (*curvipes*) and third (*quadricinctus*) to be Neotropical Empididae and transferred them to *Hybos* Meigen, 1803. The remaining two, both Oriental, which he found to be Asilidae were left in *Damalis*. This classification was generally accepted except that the two empidids were later correctly transferred to *Syneches* Walker, 1852.

Westwood (1835), apparently unaware of Wiedemann's actions, designated the first Fabricius species (*curvipes*) as type-species of *Damalis*. By so doing he located *Damalis* in the Empididae in direct conflict with Wiedemann's classification. Smith & Chvala state that 'Westwood's 1835 type designation was ignored by dipterists and the genus *Damalis* has generally been placed in the Asilidae following Wiedemann, 1828, and rejected in the Empididae'. Hull (1962), in the interests of stability of nomenclature made a new type designation, choosing Fabricius' second species (*planiceps*) as type-species in support of Wiedemann's original action. This proposal was, however, not put before the International Commission for Zoological Nomenclature for ratification.

The I.C.Z.N. unanimously accepted Smith & Chvala's proposals and set aside all previous type designations for *Damalis* and designated *Damalis planiceps* Fabricius, 1805 as type-species of the genus. This action has the consequence of leaving *Xenomyza* Wiedemann, 1817 a junior objective synonym of *Damalis* (the two genera sharing the same type-species).

While I accept the I.C.Z.N. ruling I believe that Smith & Chvala (both empidid specialists) presented the case in a somewhat biased manner (probably unintentionally). The fact of the matter is that there were asilid specialists, Harold Oldroyd chief among them, who had not ignored Westwood's 1935 type designation and had for some years accepted *Damalis* as an empidid genus (see for example Oldroyd, 1970: 287) and made extensive use of Wiedemann's 1817 genus *Xenomyza*. The I.C.Z.N.'s Opinion, while serving the interests of empidid workers, causes all the species presently listed as *Xenomyza* (27 in the Afrotropical Catalogue, 33 in the Oriental Catalogue, 3 in the Palaearctic Catalogue and the seven species fairly recently described from India by Joseph & Parui (1984)) to need relisting as *Damalis*. This fairly substantial inconvenience to asilid specialists was apparently not appreciated by both Smith & Chvala and the I.C.Z.N. A related, and somewhat disturbing, matter is that the I.C.Z.N. Opinion was not noted by either the contributor of the asilid section of the 1988 Palaearctic Catalogue or its editors.

Comments on synonymy of genera and subgenera

The various genera and subgenera which were described by Hull and Hermann have not received recognition from subsequent workers. Although I have sympathy for the proposals of Hermann and Hull, I have decided to abide by the decisions of Papavero (1973) and Oldroyd (1974, 1980), and I presently regard these taxa as synonyms of *Damalis*. I believe that there are fairly distinct groups within

Afrotropical *Damalis* which will probably need formal recognition when all representatives of this fairly widespread genus have been studied phylogenetically.

Icariomima Enderlein, 1914, monotypic for *I. coeruleiventris* Enderlein, 1914, was based chiefly on the petiolate abdomen. This character was considered no more than specific by Oldroyd (1970) when he described *Xenomyza amphora* (now a synonym of *coeruleiventris*). The condition is also found in *Damalis sphekodes* sp. n. as well as weakly developed in *xaniomerus* sp. n. As I consider that the main feature defining *Damalis* is the antennal form, and as individuals of the species I identify as *coeruleiventris* possesses this form, I do not consider that the genus *Icariomima* is justified.

Species not dealt with in this study

As already stated, this study excludes the five Madagascan species listed by Oldroyd (1980) in the Afrotropical catalogue. The synonymy of *Xenomyza* supports the following **new combinations**: *Damalis beta* (Oldroyd, 1960), *Damalis crypta* (Oldroyd, 1960), *Damalis dimidiata* (Oldroyd, 1960), *Damalis quasimodo* (Oldroyd, 1960). The status of the fifth species, *clavigera* Bromley, 1942 requires attention. Originally described in *Damalis* it was transferred to *Xenomyza* and must now revert back to *Damalis* (**revised status**).

Oldroyd (1980) listed *Discocephala debilis* Karsch, 1887 as a *Xenomyza*. The type material (in ZMB) has been studied by me and the following **new synonymy** became apparent. 1 ♀ (holotype) 'Ost-Afrika, C. W. Schmidt' & 1 ♂ 1 ♀ (paratypes) 'Nyassa-See, Langenburg, Ende XII.96—Ende I.99, Fulleborn S.' belong to *Stichopogon punctus* Loew, 1851. 1 ♀ (paratype) 'D.S.W. Afrika, Okahandja, Dinter S.G.' belongs to *Stichopogon caffer* Hermann, 1907.

Hull (1962: 61) listed *fervida* (Walker, 1856) under *Lophurodamalis*. The only species listed in the Afrotropical Catalogue with a name like this is *Tabanus fervidus* Walker, 1850 (a synonym of *T. conformis* Walker, 1848). Walker originally placed *fervida* in *Discocephala*, which is now a synonym of *Holocephala* (a genus not known from the Afrotropical Region). Hull lists four species of *Holocephala* from the 'Ethiopian' region. Three of these are now accommodated in *Rhipidocephala* while the fourth does not appear to be Afrotropical. It therefore seems reasonable to suggest that *Discocephala fervida* Walker, 1856 may actually be a species of *Rhipidocephala*. Of interest is the fact that Curran (1934), while describing *Lophurodamalis natalensis* (now a synonym of *Damalis hirtiventris*), states 'Related to *fervida* Walker but readily distinguished by the color of the legs'. Unfortunately I have not been able to examine Walker's material. Chainey (pers. commun.) failed to locate this material when asked for a full list of *Damalis* material in the BM. Until the material is traced and studied *fervida* will remain a mystery.

Another mysterious species listed by Hull (1962: 55) (under Ethiopian *Damalis*) is *cinctipes* Walker, 1871. This species was not catalogued by Oldroyd (1980) as Afrotropical, but it appears in the recently published Catalogue of Palearctic Diptera (Lehr, 1988: 215) as a 'Doubtful species' of *Xenomyza*. The type material

of this species, apparently from Egypt and Arabia, also requires tracing and examination.

Key to subsaharan *Damalis* species

Note: As a number of species are best separated on characters of the male genitalia, this key is reliable for male specimens only. Users are urged to verify identifications by reference to the illustrations provided.

- 1 Mystax composed of numerous well-developed bristles covering more than half the face; face somewhat gibbose ventrally (mostly southern African species) 2
- Mystax composed of a few major bristles situated on lower facial margin (usually 4–6), other setae if present usually poorly developed; face somewhat depressed ventrally (mostly species north of southern Africa)..... 18
- 2 Epandrial lobes long, bent through about 90° at about midlength 3
- Epandrial lobes relatively short and more or less straight, not obviously unturned at about midlength 6
- 3 Face wide (eye-width : face-width ratio <1,6); antennal bases separated by a space bigger than that between antenna and eye margin 4
- Face not particularly wide (eye-width : face-width ratio >1,7); antennal bases far closer together than distance between antennal base and eye margin .. 5
- 4 Mystax black; wingtip more or less transparent; postmetacoxal area largely membranous; ♂ genitalia as in Figs 84–86 (South Africa: Cape Province) **heterocera** (Wiedemann)
- Mystax brown-yellow; wingtip undifferentiated; postmetacoxal bridge complete; ♂ genitalia as in Figs 66–68 (South Africa: Natal) **elongatus** Hull
- 5 Wingtip more or less hyaline; scutellar disc largely apruinose (hind margin pruinose); scutum with wide extensive medial apruinose band (Fig. 81); ♂ genitalia as in Figs 78–80 **furcula** sp.n.
- Wingtip undifferentiated; scutellum entirely pruinose; scutum with two narrow medial apruinose bands (Fig. 51); ♂ genitalia as in Figs 48–50. **cylindrica** Hull
- 6 Anteroventral proximal mesothoracic tibial process present (eg. Fig. 57) .. 7
- This process absent. 10
- 7 Metathoracic tarsi with long, some lanceolate, setae (Fig. 59); ♂ genitalia as in Figs 54–56 (South Africa: eastern Transvaal & northern Natal) **doryphorus** sp. n.
- Metathoracic tarsi without lanceolate setae (South Africa: Natal and eastern Cape; Transkei)..... 8
- 8 Metathoracic femur with long setae posteriorly (Figs 76 & 114); gonocoxite with dorsal process of moderate length 9
- Metathoracic femur with short setae posteriorly (Fig. 167); gonocoxite with long dorsal process (Fig. 166); ♂ genitalia as in Figs 164–166 (South Africa: eastern Cape)..... **turneri** sp. n.
- 9 Mesothoracic femoral process with simple rounded apex (Fig. 76); distal process of hypandrium with a group of smallish setae (Fig. 71); ♂ genitalia as in Figs 71–73 **femoralis** Ricardo

- Mesothoracic femoral process with flattened and dilated apex (Fig. 115); distal process of hypandrium with a single, fairly large seta (Fig. 110); ♂ genitalia as in Figs 110–113 **monochaetes** sp. n.
- 10 Posterior margins of metepimera extended posteriorly to the point where they touch or are completely fused to form a postmetacoxal bridge (South Africa: western Cape) 11
- Posterior margins of metepimera slightly or not at all extended posteriorly, postmetacoxal area largely membranous 13
- 11 Metathoracic femora with a row of 9–10 well-developed, long black setae posteriorly; ♀ abdomen may be slightly constricted basally; ♂ genitalia as in Figs 176–178 **xaniomerus** sp. n.
- Metathoracic femora without such a well-developed setal comb; ♀ abdomen never appearing constricted 12
- 12 Entire wingtip obviously transparent and contrasting with basal parts which are dark brown stained (♀ wing uniformly stained) **conspicua** Curran
- Wingtip similar to basal part and not clearly transparent (♀ as ♂) **annulata** Loew
- 13 Wings entirely covered with microtrichia; abdominal segments densely covered with long yellow setae (especially laterally) 14
- Microtrichia largely lost from alula, anal and basal cells; abdominal segments lacking dense covering of yellow setae 16
- 14 Mesothoracic tarsomeres 3 and 4 with ventral processes 15
- Mesothoracic tarsomeres lacking processes; ♂ genitalia as in Figs 148–150 (eastern Zimbabwe, Malawi) **simplex** Curran
- 15 Mystax black; ♂ genitalia as in Figs 89–91 **hirtiventris** Macquart
- Mystax yellow; ♂ genitalia as in Figs 153–155 **speciosa** Loew
- 16 Mesothoracic femur with notch basally on anterior surface (Fig. 32); ♂ genitalia as in Figs 29–31 (eastern Zimbabwe, Mozambique and northern Transvaal) **chelomakolon** sp. n.
- Mesothoracic femur lacking basal notch 17
- 17 Scutum with two or three apruinose spots laterally; mesothoracic tibia lacking distal process; ♂ genitalia as in Figs 101–103 (southern Cape Province of South Africa) **knysna** sp. n.
- Scutum uniformly pruinose or with a single apruinose spot laterally; mesothoracic tibia with weakly developed distal process; ♂ genitalia as in Figs 106–108 (South Africa: Transvaal, Natal, eastern Cape) **longipennis** Loew
- 18 Scutum with medial longitudinal shiny apruinose band 19
- Scutum lacking such an apruinose area 23
- 19 Vertex and frons with apruinose areas adjacent to ocelli; r-m crossvein at about midlength of anterior margin of discal cell (Fig. 183) 20
- Vertex uniformly pruinose; r-m crossvein nearer to base of discal cell (Fig. 207) 21
- 20 Discal cell uniformly covered with microtrichia; ♂ genitalia as in Figs 133–135 (Zaire) **poseidon** (Oldroyd)
- Discal cell largely lacking microtrichia; ♂ genitalia as in Figs 16–18 (Angola) **angola** sp. n.

- 21 Distal half of wing (from about r-m crossvein) transparent and lacking microtrichia, thus contrasting with basal part which is somewhat brown-stained and bearing microtrichia 22
- Wing uniformly coloured and covered with microtrichia (♀ has transparent wingtip); ♂ genitalia as in Figs 118–120. **neavei** sp. n.
- 22 Lateral apruinose area of scutum continuous and produced anteriorly to postpronotal lobe and posteriorly to postalar lobe (Fig. 142); ♂ genitalia as in Figs 139–141 **pulchella** Bromley
- Lateral apruinose areas discontinuous and not produced anteriorly or posteriorly as above (Fig. 173) **venustus** Bertoloni
- 23 Wing extensively covered with microtrichia (may be sparse along posterior margin); postmetacoxal bridge complete 24
- Wing transparent and completely lacking microtrichia; postmetacoxal area entirely membranous 26
- 24 Scutellum apruinose, marginal setae well developed; hind femur relatively short and thickset (Fig. 147); proximal abdominal segments not markedly constricted; ♂ genitalia as in Figs 144–146. **scutellata** (Oldroyd)
- Scutellum entirely pruinose, marginal setae minute and hardly visible; hind femur relatively long and thin; proximal abdominal segments constricted giving a wasp-like appearance (Figs 38 & 162) 25
- 25 Tergum 3 entirely pruinose; ♂ genitalia as in Figs 158–163. **sphekodes** sp. n.
- Tergum 3 entirely apruinose; ♂ genitalia as in Figs 34–37. **coeruleiventris** (Enderlein)
- 26 Epandrium and hypandrium fused laterally (Figs 10 & 96) 27
- Epandrium and hypandrium not fused together laterally 28
- 27 Lower half to three-quarters of face apruinose; ♂ genitalia as in Figs 10–14 **achilles** sp. n.
- Lower one-quarter of face apruinose; ♂ genitalia as in Figs 96–98 **hyalipennis** Macquart
- 28 ♂ Genitalia as in Figs 41–43; epandrial lobes with tips inwardly directed; gonocoxite with large, projecting dorsal lobes **complexa** (Oldroyd)
- ♂ Genitalia not as above. 29
- 29 Aedeagus with forked tip, each prong being long and sinuous; ♂ genitalia as in Figs 62–64 **drilus** sp. n.
- Aedeagus with relatively simple tip; ♂ genitalia as in Figs 124–126. **pollinosa** Ricardo

Descriptions and redescrptions of species (arranged alphabetically)

Damalis achilles sp. n.

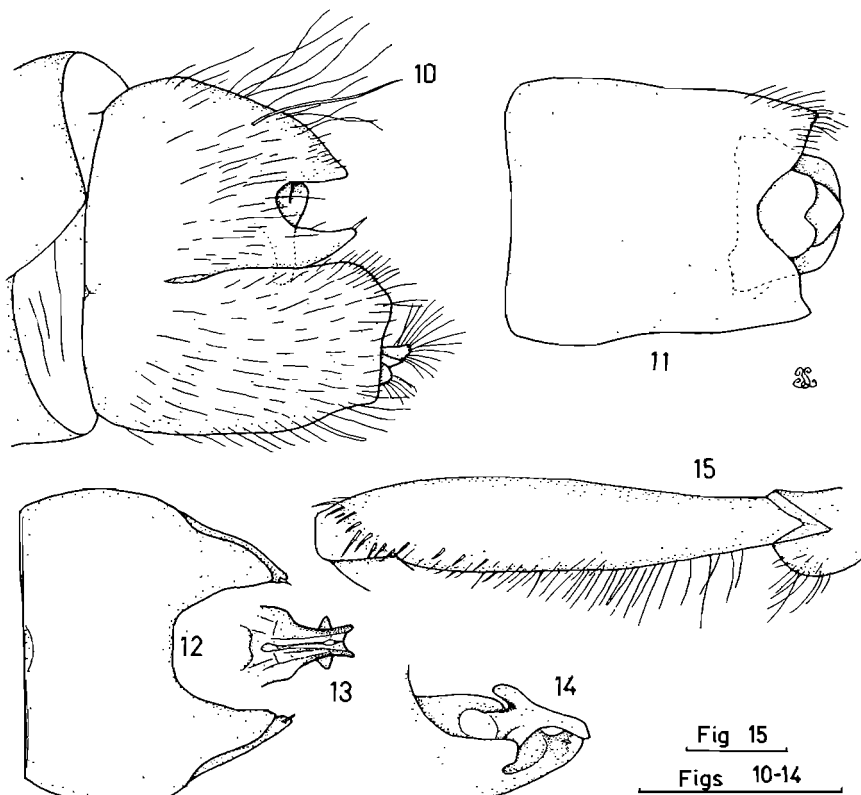
Figs 10–15, 100, 185

Etymology: L. m. a strong and handsome Trojan warrior. Refers to large, robust appearance.

Description: Based on holotype ♂ (South Africa, Mtunzini).

Head: Red-brown, gold-silver pruinose. Antennal setae dark red-brown; scape with moderately developed dorsal protuberances; sockets abutting. Eye: face width ratio = 2,2. Face with gentle convexity midway between antennal bases and lower facial margin; lower half shiny apruinose. Frons and vertex pruinose except for shiny apruinose ocellar tubercle. Mystax composed of 8 black bristles on lower facial margin (those laterally being relatively small). Palp dark red-brown; slender fusiform.

Thorax: Sct red-brown; uniform fine silver pruinose. Pprn lb largely shiny apruinose; pal cal pruinose except for apruinose median spot; major scutal setae not clearly differentiated (npl fine longish black). ca 10 fine black and white sctl s; sctl pruinose except for shiny apruinose hind margin. Length:height ratio of scutum = 2,0. Postmetacoxal area entirely membranous. Pleura including anepst and anepm uniform fine silver pruinose. Wing 10,0 × 3,2 mm (♀ paratype); microtrichia absent; venation (Fig. 185—♀ paratype); R_{2+3} almost straight, gently curved posteriorly just before margin; membrane uniformly unstained. Halter brown-yellow. Legs red-brown, tips of femora dark red-brown anteriorly and posteriorly; mesothoracic leg lacking processes; fem 3 = 4,5 mm (Fig. 15).



Figs 10–15. *Damalis achilles* sp. n. 10–14. ♂ genitalia. 10. Lateral. 11. Ventral. 12. Dorsal. 13. Aedeagus, dorsal. 14. Gonocoxite, dorsal. 15. Right metathoracic femur, anterior aspect. 10–15 = holotype (Mtunzini).

Abdomen: Terga red-brown; apruinose except for weak fine silver pruinose anterior and lateral margins; setae tiny white and dark red-brown. Sterna similar to terga but entirely dull silver pruinose. Genitalia (Figs 10–14); epand fused with hypd proximally; epand elongate, lobes not clearly differentiated; gonocoxite with fairly straight dorsal and ventral projections; aed with lateral expansions apically; cerci almost completely fused except distally; hypocrt clearly extending beyond cerci.

Variation: ♂ similar to ♀.

Material examined: SOUTH AFRICA: *Natal*: 1 ♂ (holotype) 1 ♀ (paratype), 1,5 km E Mtunzini, Umlalazi Nature Res., 2831DD, xii.1978 i.1979, R. Miller, indig. for. Malaise tr (NM); 3 ♀ 1? (paratypes), Tongaat 29°35'S:31°08'E, '08–9 [? 1908–1909], Burnup (NM BM). NM Type No. 3.

Distribution: Known only from Natal, South Africa (Table 1; Fig. 100).

Biological data: Nothing known.

Relationship: Most closely related to *hyalipennis* but also to *complecta*, *drilus* and *pollinosa*.

***Damalis angola* sp. n.**

Figs 16–21, 183

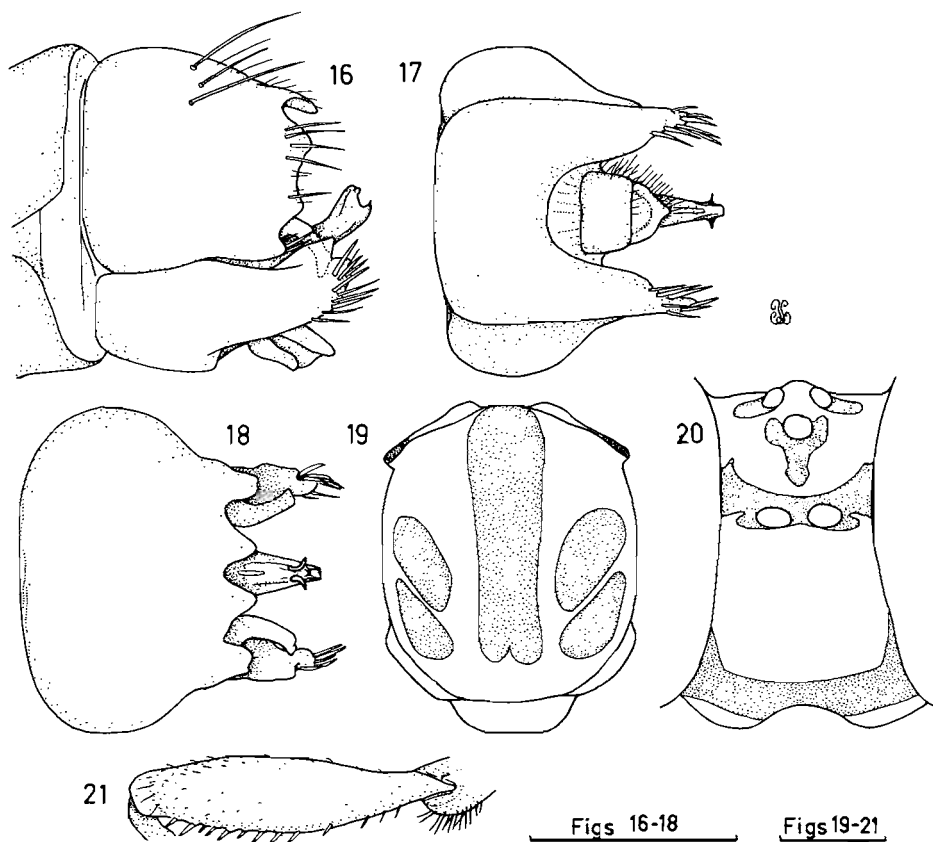
Etymology: Named after country of origin—Angola.

Description: Based on holotype ♂ (Angola, Bruco).

Head: Black, silver pruinose except for some shiny apruinose areas as noted. Antennal setae dark red-brown; scape with poorly developed ventral and dorsal protuberances; sockets abutting. Eye:face width ratio = 1,9. Face flat, lower facial margin depressed; uniformly pruinose except for lower facial margin. Frons and vertex with pattern of apruinose areas (Fig. 20). Mystax composed of 6 yellowish bristles and a few whitish setae on lower facial margin. Palp dark red-brown, slender fusiform.

Thorax: Sct dark red-brown; gold-red pruinose except for apruinose areas (Fig. 19). Pprn lb with shiny apruinose spot; pal cal with shiny apruinose spot; major scutal setae not clearly differentiated. Sctl s minute (considered absent); sctl pruinose except for hind margin. Length:height ratio of scutum = 2,0. Postmetacoxal bridge complete. Pleura fine silver pruinose except for parts of anepst and anepm. Wing $7,7 \times 2,7$ mm; microtrichia largely lost from all cells posterior to M_1 ; venation (Fig. 183—♂ paratype); distal part of R_{2+3} gently curved anteriorly; membrane slightly yellow-stained anteriorly. Halter pink-yellow. Legs yellow-brown, anterior surfaces of fem 2 and 3 dark red-brown; all femora with tips dark red-brown anteriorly and posteriorly; mesothoracic leg lacking processes; fem 3 = 3,0 mm (Fig. 21).

Abdomen: Terga brown-yellow with dark red-brown anterior margins; lateral margins silver pruinose; setae short white. Sterna dark red-brown, yellow-brown centrally; posteriorly fine silver pruinose; setae sparse, white. Genitalia (Figs 16–18—paratype ♂); epand with dorsal flange; aed with hook-like ventrodistal



Figs 16–21. *Damalis angola* sp. n. 16–18. ♂ genitalia. 16. Lateral. 17. Ventral. 18. Dorsal. 19. Pruinescence pattern of scutum. 20. Pruinescence pattern of face and vertex. 21. Right metathoracic femur, anterior aspect. 19–20. Shaded areas represent apruinose parts. 16–18 = paratype (Bruco); 19–21 = holotype (Bruco).

process; cerci completely fused and distally truncate; hypocrite clearly extending beyond cerci and with pointed tip.

Variation: ♂ similar to ♀.

Material examined: All specimens paratypes except for holotype. ANGOLA: 5 ♂ (inc. holotype) 4 ♀, (A11) Bruco [?], 26.ii.–2.iii.1972, Southern African Exp. B. M. 1972–1. (BM NM); 1 ♂, Angola, 73/66 (BM); 2 ♂, 18 mi N. Luanda (8°50'S:13°15'E), 1.xii.1966, E. S. Ross & K. Lorenzen, 120 m (CAS); 1 ♂ 1?, Sa da Bandeira Huila, SE1413DC, 2–4.xii.1974 (H24273) 13–14.xi.1974 (H22097) (SMW).

Distribution: Known only from Angola (Table 1).

Biological data: Nothing known.

Relationship: Most closely related to *poseidon* but also is close to *neavei*, *pulchella* and *venustus*.

Damalis annulata Loew, 1858 **stat. rev.**

Figs 22–26, 184

Damalis annulata Loew, 1858: 338; Loew, 1960: 183; Hull, 1962: 55.*Damalis annulatus*; Kertész, 1909: 93.*Xenomysa annulata*; Oldroyd, 1974: 130; Oldroyd, 1980: 372.

Redescription: Based on holotype ♂ (South Africa, Cap. B. Spei.).

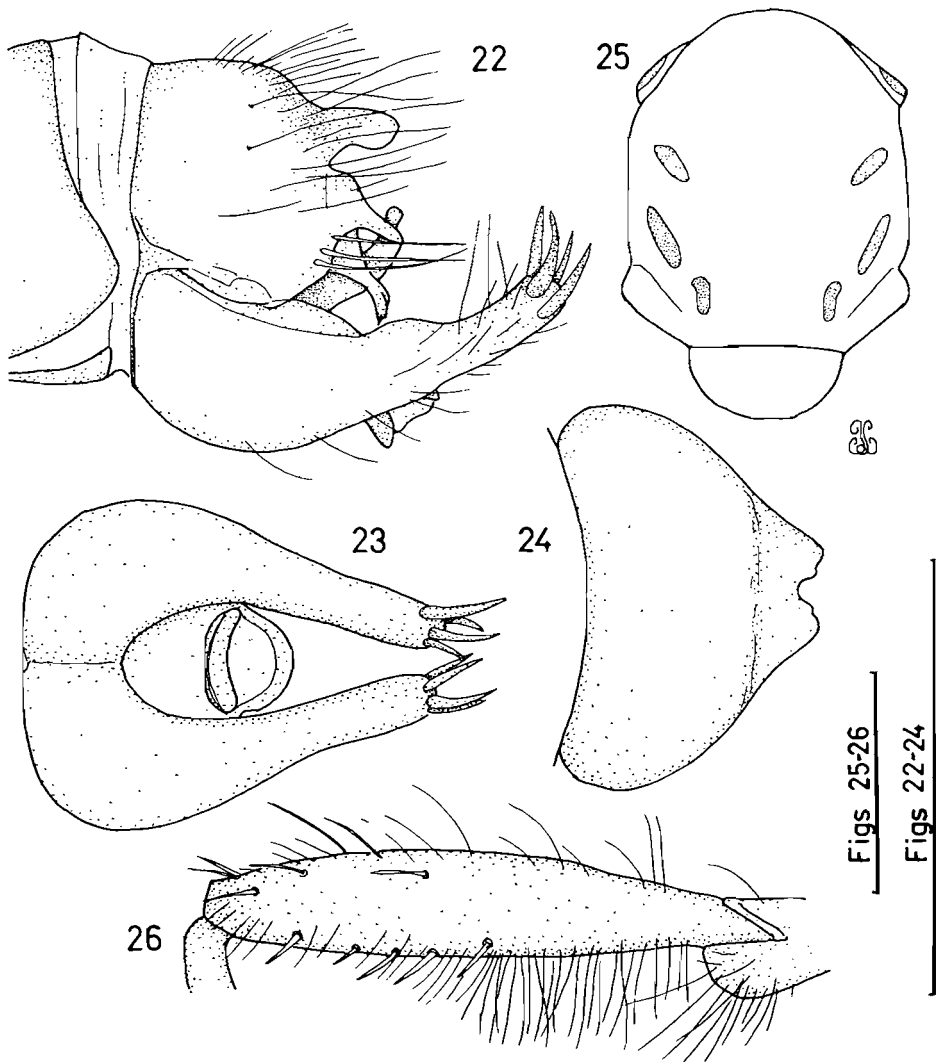
Head: Dark red-brown, lower half of face yellow-brown; silver pruinose. Antennal setae black; scape with poorly developed ventral protuberance; sockets abutting. Eye: face width ratio = 1.8. Face gibbose in lower region; uniformly pruinose. Frons and vertex uniformly pruinose. Mystax composed of many black bristles occupying lower two-thirds of face. Palp yellow; fairly bulbous (*ca* three times longer than wide).

Thorax: Sct dark red-brown to black; uniform dull gold-silver pruinose. Pprn lb silver pruinose except for a tiny apruinose spot posteriorly; pal cal pruinose; major scutal setae quite well developed, black; acr and dc strong, npl weak, sal moderate, pal strong. Four strong black setae; setae uniformly pruinose. Length: height ratio of scutum = 1.8. Postmetacoxal bridge complete. Pleura including anepst and anepm uniform fine silver pruinose. Wing 6.0×2.3 mm; microtrichia cover entire surface (weak along hind margin of cell a_1); venation (Fig. 184—Brenton-on-Sea ♂ illustrated); distal part of R_{2+3} gently curved anteriorly; membrane fairly uniformly weakly brown-stained (especially along veins). Halter dull yellow-brown. Legs with femora and tibiae brown-yellow posterodorsally, dark red-brown anteroventrally; mesothoracic leg lacking processes; fem 3 = 3.0 mm (Fig. 26).

Abdomen: Terga dark red-brown to black; each tergum silver pruinose except for posterodorsal shiny apruinose area; setae short black and white. Sterna similar but with small apruinose median spot near posterior margin. Genitalia (Figs 22–24—Brenton-on-Sea ♂ illustrated); epand fairly elongate with cluster of black setae at distal tips of lobes; hypd short, somewhat bilobed distally in dorsal aspect; aed short, upturned distally; cerci completely fused; hyprct extending slightly beyond cerci.

Variation: ♂ similar to ♀. Some specimens have face entirely black and weak apruinose areas on scutum (Fig. 25).

Material examined: SOUTH AFRICA: *Cape Province*: 1 ♂ (holotype), Cap. B. Spei., Victorin, 17, 270, 235/88 (NRS); 2 ♂ 2 ♀ 1?, Wallekraal, Namaqualand [3017BC], x.1950, Mus Exp (SAM); 1 ♀, 10 km E Garies, 3017DB, 3.ix.1981, Londt Schoeman & Stuckenberg, Succulent Karoo (NM); 1 ♂, 10 km W Garies, 3018CA, 3.ix.1981, Londt Schoeman & Stuckenberg, Namaqual. Broken veld (NM); 1 ♂ 3 ♀, Klipvlei, Garies, Namaqualand 3018CA, xi.1931, Mus Staff (SAM); 2 ♀, Van Rhyn's Pass [31°23'S:19°00'E], 4–5.xi.1933, van Son (NM); 1 ♂ 5 ♀, 6 mi W Nieuwoudtville, 3119AC, 11.ix.1972, Irwin, near top of escarpment, 2 500 ft (NM); 1 ♀, Nieuwoudtville [3119AC], xi.1931, Miss Mackie (BM); 1 ♂ 5 ♀, 13 mi Clanwilliam, 3218BA, 15.ix.1972, Irwin, hillside with flowers, 1 625 ft (NM); 1 ♂, Clanwilliam District, Witelskloof, 32°20'35S:18°48'E, 13.x.1987, Gess (AM); 1 ♂ 1 ♀ Klein Alexandershoek, 32°20'20"S 18°46'E to Het Kruis, 26.ix.1985, Gess (AM); 1 ♀, Paleisheuwel [32°28'S:18°43'E], xi.1948, Mus Exp



Figs 22-26. *Damalis annulata* Loew. 22-24. ♂ genitalia. 22. Lateral. 23. Ventral. 24. Dorsal. 25. Pruinescence pattern of scutum. 26. Right metathoracic femur, anterior aspect. 22-24, 26 = ♂ (Brenton-on-Sea); 25 = ♀ (13 mi W Clanwilliam).

(SAM); 1 ♂ 6 ♀, Graafwater [3218BA], x.1947, Mus Exp (SAM); 3 ♀, 30 km S Clanwilliam, 3218BD, 31.viii.1981, Londt Schoeman & Stuckenberg, karrooid broken veld (NM); 1 ♂, 4 m S Clanwilliam [33°11'S:18°54'E], ix.1961, SAM (SAM); 1 ♀, 30 km E Clanwilliam [3219AA], 6.ix.1983, Freidberg (NM); 3 ♂ 3 ♀, Pakhuis Pass, Clanwilliam Dist. [32°08'S:19°00'E], 17-19.x.1964, Stuckenberg, 950 m (NM); 3 ♂ 1 ♀, 2 mi NNE Pakhuis Farm, Pakhuis Mts. 3219AA, 14.ix.1972, Irwin, 1 800 ft (NM); 5 ♂ 8 ♀ 1?, Pakhuis Pass [32°08'S:19°00'E], ix.1961, SAM (SAM); 1 ♂ 3 ♀, Citrusdal Dist. [32°35'S:19°01'E], xi.1948, Mus Exp (SAM); 2 ♂ 1 ♀, 18 km E of Sutherland (Observatory), 3220BD, 18.xi.1986, Quickelberge &

Londt, rocky hillside bush, 1 700 m (NM); 1 ♂, Cape Peninsula, Camps Bay [3318CD], 5.i.1926, Turner (BM); 1 ♂, Cape Peninsula, Turner (BM); 2 ♀, Doorn River [3319BB], 3.xi.1931, Ogilvie (BM); 2 ♂, Tulbach [3319AC], xi.1947, Theron (NM); 1 ♂ 1?, Ceres-Karoo, Leeukopsand [33°22'S:19°19'E], 29.ix.1974, Theron (NM); 2 ♂ 2 ♀, 18 m E of Touws R to Hondewater [33°39'S:20°46'E], xii.1962 (SAM); 2 ♀, Montagu [3320CC], x.1919, Tucker (BM); 1?, Sevenweeks Poort-Rooinek Pass [33°20'S:20°55'E], x.1952, Mus Exp (SAM); 1 ♀, Sevenweekspoort Laingsburg Dist. [33°22'S:21°25'E], 19–22.ix.1959, Stuckenberg (NM); 1 ♀, 7 Weeks Poort [33°22'S:21°25'E], 17.xi.1940, van Son (NM); 1 ♀, Swartberg Pass, Gamka Rd, 3321BD, 10.xi.1986, Quickelberge & Londt, N slope Rocky area (NM); 1 ♂ 1 ♀, Moordenaars Karoo, Lammerfontein [33°03'S:21°00'E], x.1952, Mus Exp (SAM); 1 ♂ 1 ♀, 15 km SE Oudtshoorn, 3322CB, 9.xi.1986, Londt & Quickelberge, macchia/rocky hill (NM); 5 ♂ 4 ♀ 2?, Oudtshoorn, Zebra [3322CA], x.1951, Mus Staff (SAM); 1 ♂, Leeuwkloof Nieuwveld, Beaufort W. [33°57'S:22°05'E], x.1935, Mus Staff (SAM); 4 ♂ 1 ♀ 1?, Swartebergen, Prince Albert Div. [33°13'S:22°03'E], xi.1935, Mus Staff (SAM); 3 ♂ 1 ♀, 1 km NE Uniondale, 3323CA, 31.x.1978, Miller & Londt, rocky hillside scrub (NM); 1 ♂, Uniondale, 3323CA, 12.xii.1979, Londt & Stuckenberg, steep hillside macchia (NM); 10 ♂ 14 ♀ 1?, Willowmore [33°17'S:23°30'E], iii.1920 15 20 25.xi.1916 1.xii.1916 20.xi.1917 1.xii.1917 Dr Brauns (NM); 1 ♂ 1 ♀, Willowmore [3323AD], 20 25.ii. 20.xi.1916, Brauns (ZSM); 1 ♂ 1 ♀, Willowmore, 10.xi.1909, Brauns (BM); 1 ♂, Willow River, Uitenhage Dist [3325CD], x.1938, Mus Staff (SAM); 11 ♂ 7 ♀ Alicedale, New Years Dam, 3326AC, 5.xi.1978, Miller & Londt, dam margin (NM); 1 ♀, Hilton, Grahamstown [33°18'S:26°32'E], 2.xii.1977, Gess, on

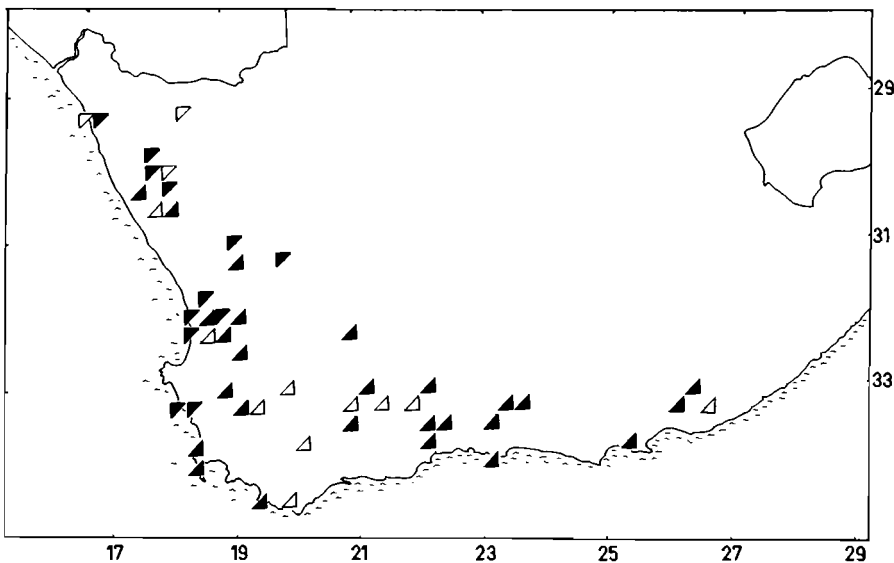


Fig. 27. *Damalis annulata* Loew (▲) and *D. conspicua* Curran (▼), distribution. Closed triangles represent localities for which ♂ specimens are known (identifications certain), open triangles represent localities for which only ♀ specimens are available (identifications presumed).

Selago, 77/78/89 (AM); 1 ♂ 2 ♀, 12 mi NW Grahamstown [3326AB], 21.xi.1970, Daly (CAS); 1 ♂ 1?, Fish Hoek (Cape Peninsula) [34°08'S:18°26'E], x.1931, Munro (NM); 1 ♀, Zoetendals Vallei [? 34°43'S:19°59'E], x.1940, van Son (NM); 4 ♂ 4 ♀, Pearly Beach, Bredasdorp [3419CB], xii.1958, SAM (SAM); 20 ♂ 10 ♀, Brenton-on-Sea, 3423AA, 10.xii.1979, Londt & Stuckenberg, dune & hillside vegetation (NM); 1 ♀, Knysna, Leisure Isl., 3423AA, 9–10.xii.1979, Londt & Stuckenberg, grass at waters edge (NM).

Distribution: Winter rainfall region of the Cape Province of South Africa extending eastward as far as Grahamstown area (Table 1; Fig. 27).

Biological data: I have collected this species in macchia.

Type-locality: The type-locality is here fixed as Cape Peninsula.

Relationship: Most closely related to *conspicua* but also to *xaniomerus*.

***Damalis chelomakolon* sp. n.**

Figs 28–33, 186

Etymology: Gr. n. *cheloma* = notch; *kolon* = limb, leg. Refers to peculiar notch on fem 2.

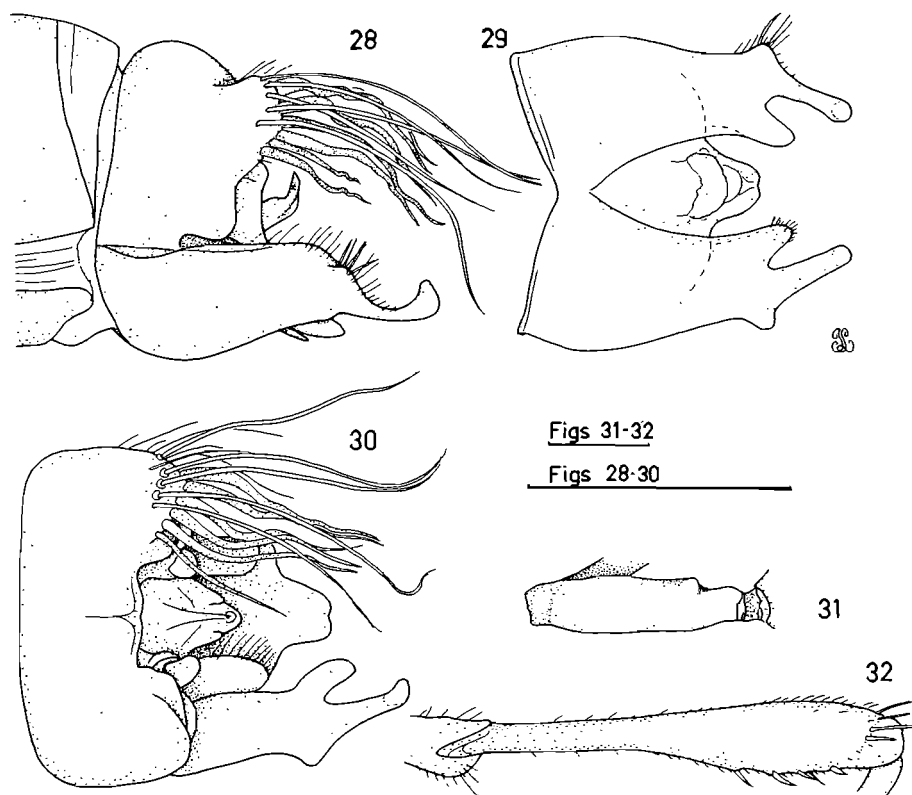
Description: Based on holotype ♂ (Zimbabwe, Umtali).

Head: Dark red-brown, fine gold-red pruinose. Antennal setae dark red-brown; scape with moderately well-developed ventral and dorsal protuberances; sockets abutting. Eye: face width ratio = 2,2. Face gently protuberant in lower part, lower facial margin slightly depressed; uniformly pruinose. Frons and vertex uniformly pruinose. Mystax composed of many black bristles on lower half of face (small setae in upper part). Palp dark brown; slender fusiform.

Thorax: Sct dark red-brown to black; silver-gold pruinose except for single postsutural shiny apruinose area laterally. Pprn lb pruinose; pal cal largely shiny apruinose; major scutal setae not clearly differentiated. 4 fine black setl s; setl pruinose except for shiny apruinose hind margin. Length:height ratio of scutum = 2,2. Posterior margins of metepimera extended slightly posteromedially (as in Fig. 5). Pleura pruinose except for shiny apruinose area on anepst. Wing $9,5 \times 3,1$ mm; microtrichia largely missing from cells br, bm, cup, a_1 ; venation (Fig. 186—paratype illustrated); distal part of R_{2+3} almost straight; membrane uniformly weakly yellow-brown stained. Halter brown. Legs red-brown, femora anterodistally dark red-brown; anterior face of fem 2 with characteristic notch proximally (Fig. 31), otherwise mesothoracic leg lacks processes; fem 3 = 4,2 mm (Fig. 32).

Abdomen: Terga dark red-brown to black; largely shiny apruinose except for fine red-gold anterolateral areas; setae short black centrally, longer shiny white laterally. Sterna similar; central parts shiny apruinose; setae, with longer shiny white setae only. Genitalia (Figs 28–30—paratype); epand lobes bifurcate in ventral aspect; hypd rather truncate; aed short and thickset; cerci completely fused; hyprect clearly extending beyond cerci.

Variation: ♂ similar to ♂.



Figs 28–32. *Damalis chelomakolon* sp. n. 28–30. ♂ genitalia. 28. Lateral. 29. Ventral. 30. Dorsal. 31. Left mesothoracic femur, dorsal aspect, showing anterodorsal notch. 32. Right metathoracic femur, anterior aspect. 28–32 = holotype (Vumba).

Material examined: All specimens paratypes except for holotype. MOZAMBIQUE: 1 ♀, Dondo [19°36'S:34°44'E], 4.ii.1924, R. Stevenson (NM). SOUTH AFRICA: 1?, L. Trichardt [23°03'S:29°54'E], 25.i.1931, G. v Son (NM). ZIMBABWE: 1 ♂ (holotype) 1 ♀, Umtali [18°58'S:32°40'E], 30.i.1924, R. Stevenson (NM); 1 ♂ 1 ♀, Umtali, 30.i.1924, R. Stevenson (SIW); 1 ♀, Mt Inyangani, Inyanga [18°18'S:32°51'E], 15.iii.1970, 1 900 m, Nat. Museum S. Rhodesia (NMZ). 1 ♂ 14 ♀, Umtali Dist., Vumba [19°53'S:31°22'E], 19.ii. iii.1931 ii.1932, P.A. Sheppard (NM); 2 ♂ 1 ♀, Vumba Mts [19°53'S:31°22'E], 2–15.ii.1924 ii.1926, Rhodesia Museum, 5 700' (NMZ); 1 ♂ 1 ♀, Vumba Mts, 2–15.ii.1924, Rhodesia Museum, 5700' (BM); 1 ♂ 1 ♀, Vumba Mts, ii.1928, Rhodesia Museum (NMZ); 2 ♂ 1 ♀, Vumba Mts, 24.ii.1938 iii.1956 9.iii.1959, Nat. Museum S. Rhodesia (NMZ); 1 ♂, Vumba Mts, Umtali District, ii.1938, A. Cuthbertson, Dept Agric S. Rhodesia (ZSM); 1 ♀, Vumba, iii.1930, Rhodesia Museum (ZSM); 1 ♀, Vumba Mts., 20.ii.1935, Major Drysdale (SIW); 1 ♀, Chirinda Forest [20°26'S:32°42'E], xi.1930, A. Cuthbertson (SIW). NM Type No. 4.

Distribution: Mozambique, Zimbabwe and northern Transvaal, South Africa (Table 1, Fig. 33).

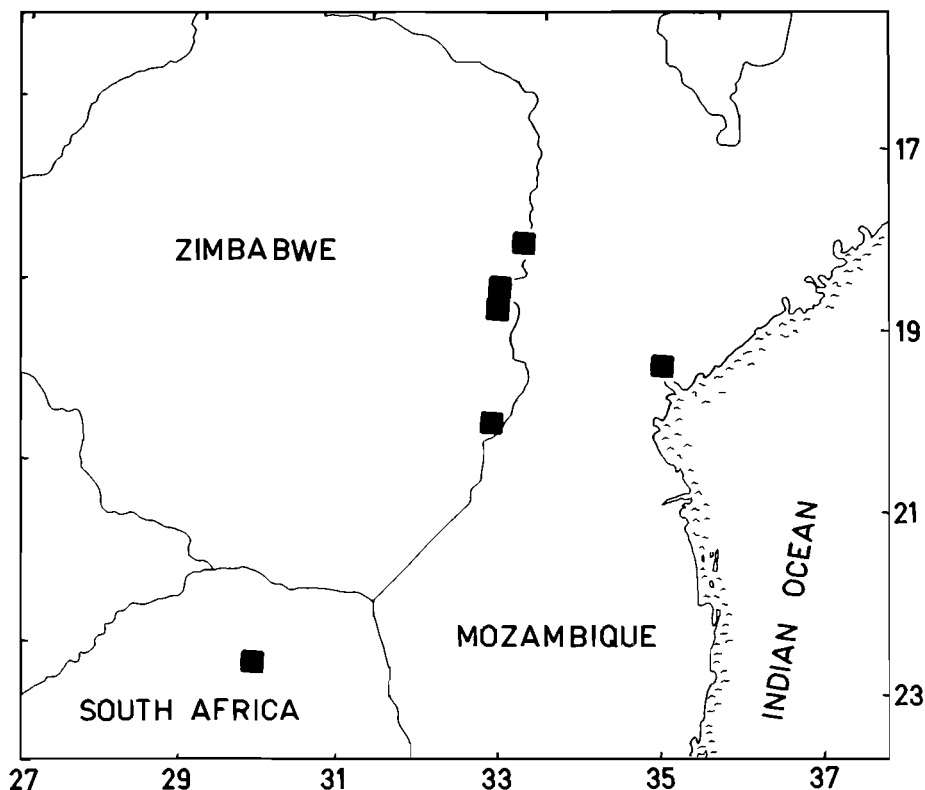


Fig. 33. *Damalis chelomakolon* sp. n. distribution.

Biological data: Cuthbertson (1938) provides some interesting biological notes on this species (as *Lo[ll]phurodamalis longipennis* Loew) stating that it is a common species in the highlands of the Umtali district during the wet season. The flies occur on the stems of tall grass or outstanding twigs or shrubs, and dart at small passing insects. Cuthbertson provides notes on the mating habits of the species drawing attention to the peculiar posture assumed during copulation. Cuthbertson provides a detailed list of prey here summarised to conform with the style used for other species in this paper: Hymenoptera—Formicidae (2); Diptera—Muscidae (1); Isoptera—Termitidae (1). He also states 'specimens of both sexes were taken with leaf-hoppers, small rove-beetles, midges and small Acalyprate flies . . . near the Vumba Hotel'.

Relationship: Closely related to both *knysna* and *longipennis*.

Damalis coeruleiventris (Enderlein, 1914) **comb. n.**

Figs 34–40, 187

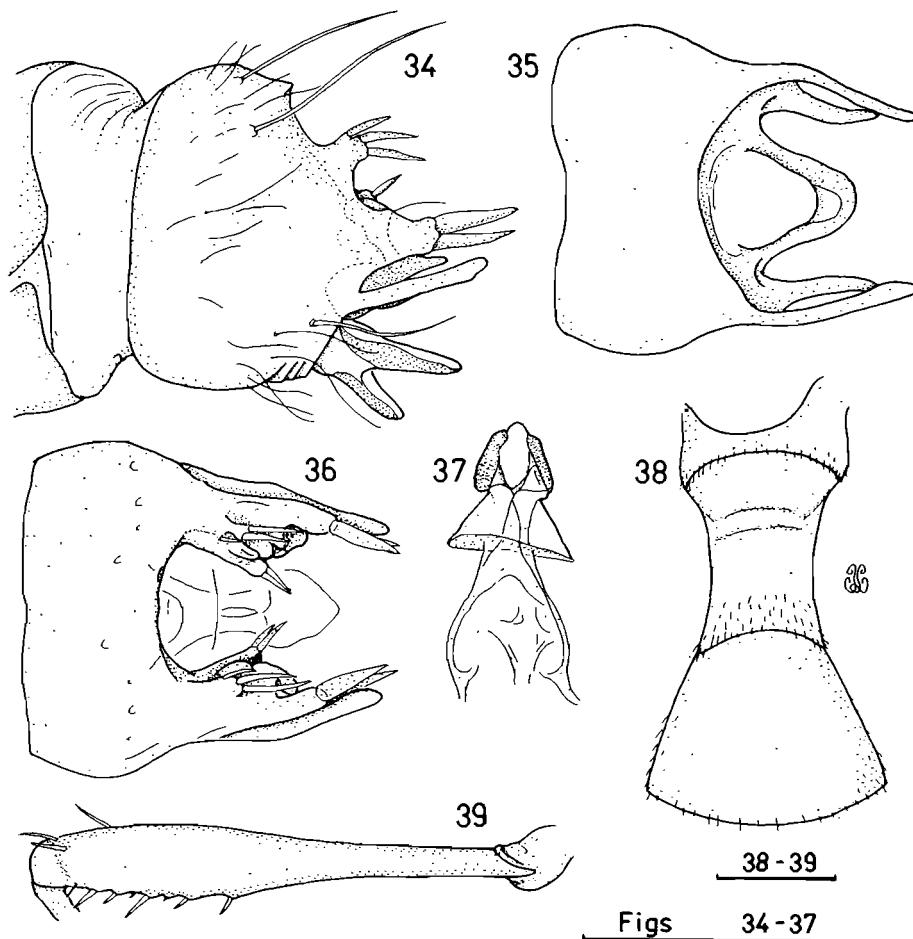
Icariomima coeruleiventris Enderlein, 1914: 163; Hull, 1962: 63; Oldroyd, 1980: 370.

Xenomyza amphora Oldroyd, 1970: 290; Oldroyd, 1980: 372 **syn. n.**

Redescription: Based on holotype ♂ (Zaire, Bambesa) of *amphora* (in poor condition); supplemented by topotypic ♀ (*amphora*).

Head: Dark red-brown, red-gold pruinose. Antennal setae dark brown; scape with poorly developed ventral and dorsal protuberances; sockets abutting. Eye: face width ratio = 1,9. Face flat, lower facial margin depressed; uniformly pruinose. Frons and vertex uniformly pruinose. Mystax composed of 2 dark brown bristles on lower facial margin (♀ has 4). Palp brown; slender fusiform.

Thorax: Sct dark red-brown; uniform dull gold-red pruinose. Pprn lb shiny apruinose; pal cal pruinose; major scutal setae not clearly differentiated. Sctl s absent; sctl uniformly pruinose. Length:height ratio of scutum = 2,6. Postmetacoxal bridge complete. Pleura including anepst and anepm uniform fine silver pruinose. Wing $7,9 \times 2,8$ mm (♀ paratype); microtrichia cover entire surface; venation (Fig. 187—Ekok ♀); distal part of R_{2+3} gently curved anteriorly; alula reduced to a narrow strip; membrane uniformly unstained. Halter stem brown,



Figs. 34-39. *Damalis coeruleiventris* Enderlein. 34-37. ♂ genitalia. 34. Lateral. 35. Ventral. 36. Dorsal. 37. Acedeagus, dorsal. 38. Terga 1-3, dorsal, showing construction. 39. Right metathoracic femur, anterior aspect. 34-37, 39 = holotype (Bambesa); 38 = paratype ♀ (Bambesa).

knob black. Legs dark brown, femora and tibiae paler proximally; mesothoracic leg lacking processes; fem 3=3,8 mm (Fig. 39).

Abdomen: Terga dark red-brown; apruinose; setae short dark red-brown. Sterna yellow-brown; fine silver pruinose; setae sparse, small red-brown. Abdomen petiolate (T2 & T3 constricted) as in Fig. 38. Genitalia (Figs 34–37); epand apparently completely fused with somewhat reduced hypod; aed short with thickset distal section; cerci completely fused, hypod clearly extending beyond cerci.

Variation: ♂ similar to ♀.

Material examined: CAMEROUN: 1 ♀, Ekok, 24 mi E Tekmo [3°09'N:12°05'E], 11–12.x.1966, Ross & Lorenzen, 650 m, (CAS); 1 ♀, Kampo, Nyabessang [? Nyabessan—2°24'N:10°24'E], iv.1970, Nonvll [Nonveiller] (MNP). CENTRAL AFRICAN REPUBLIC: 1 ♂, La Maboque [?], 23.ix.1967, Matile (MNP). NIGERIA: 1 ♀, Lagos State, Isheri, Lagos [6°25'N:3°27'E], 19.v.1974, Cornes (NMOW). ZAÏRE: 1 ♂ 2 ♀ (holotype & paratypes—*amphora*), Bambesa [3°28'N:25°43'E], 25.ix.1933 (♂) 15.ix.1933 xii.1933, H. J. Bredo (KMT); 1 ♀ [now defective] (paratype—*amphora*), Terr. de Kasongo, riv. Lumami [4°23'S:26°33'E], x-xii.1959, P. L. G. Benoit (KMT); 1 ♀ (paratype—*amphora*), Kikwit [5°02'S:18°49'E], x.1920, P. Vanderijst (KMT). UNKNOWN COUNTRY: 1 ♀, Boukoko [?], 14.vi.48 (SIW).

Distribution: Recorded from Cameroun, Central African Republic, Nigeria and Zaïre (Table 1, Fig. 40).

Biological data: Nothing known.

Relationship: Most closely related to *sphekodes* but also related to *scutellata*.

Synonymy: I have not been able to study Enderlein's type (1 ♀, Kamerun, Barombi, Von L. Conradt) apparently deposited in the Stettiner Zoological

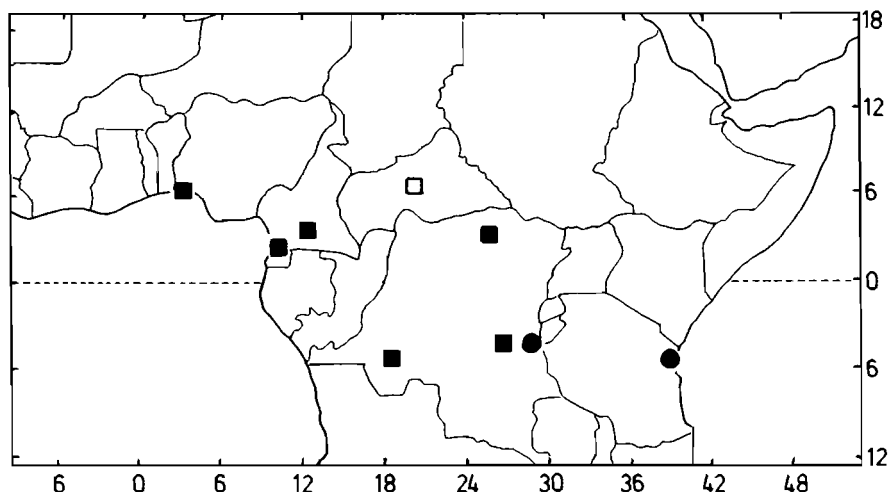


Fig. 40 *Damalis coeruleiventris* Enderlein (■) and *D. spekhodes* sp. n. (●), distribution. Open square indicates lack of precise locality in Central African Republic.

Museum. The description, conveniently translated into English by Hull (1962), strongly suggests that the species is closely related to both *amphora* Oldroyd and *sphekodes* sp. n. I have studied Oldroyd's types of *amphora* from Zaïre and have also seen a single ♀ from Cameroun (Ekok, 24 mi E Tekmo) which I believe is conspecific. This indicates a strong probability that *coeruleiventris* and *amphora* are the same species, so I rank *amphora* as a synonym.

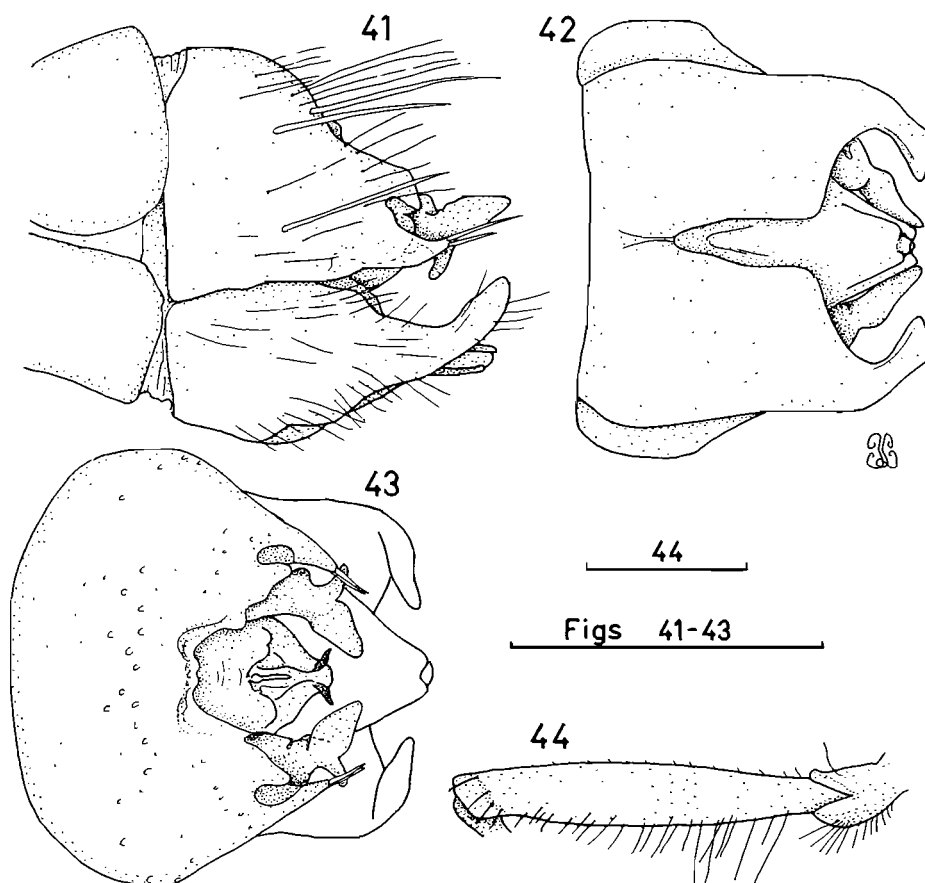
Damalis complecta (Oldroyd, 1968) **comb. n.**

Figs 41–45, 188

Xenomyza complecta Oldroyd, 1968: 383; Oldroyd, 1980: 372.

Redescription: Based on holotype ♂ (Ivory Coast, Bingerville).

Head: Dark red-brown, fine gold-silver pruinose. Antennal setae dark brown; scape with poorly developed dorsal protuberance only; sockets abutting. Eye: face width ratio = 1.8. Face flat, lower facial margin depressed; lower half shiny



Figs 41–44. *Damalis complecta* Oldroyd. 41–43. ♂ genitalia. 41. Lateral. 42. Ventral. 43. Dorsal. 44. Right metathoracic femur, anterior aspect. 41–44 = holotype (Bingerville).

apruinose. Frons and vertex pruinose except for shiny apruinose ocellar tubercle. Mystax composed of 4 black bristles on lower facial margin (there are also fine upwardly directed red setae on flat part of face). Palp dark red-brown; slender fusiform.

Thorax: Sct brown; uniformly pruinose, centrally gold-brown, laterally silver. Pprn lb pruinose except for a tiny shiny apruinose posterior spot; pal cal pruinose except for a tiny shiny apruinose spot medially; major scutal setae weakly differentiated. 9 yellow upwardly directed sctls; sctl pruinose except for hind margin. Length:height ratio of scutum=2,1. Postmetacoxal area entirely membranous. Pleura including anepst and anepm uniform silver pruinose. Wing $5,9 \times 2,0$ mm; microtrichia absent from entire surface; venation (Fig. 188—Ile Ife ♀); R_{2+3} straight; membrane uniformly unstained. Halter yellow. Legs brown, tips of femora dark red-brown anteriorly and posteriorly; mesothoracic leg lacking processes; fem 3=2,4 mm (Fig. 44).

Abdomen: Terga dark red-brown; entirely fine gold-red pruinose; setae short dark red-brown medially white laterally. Sterna similar but fine gold-silver pruinose; setae pale white. Genitalia (Figs 41–43); tips of epand lobes inwardly turned; goncx with sagittiform dorsal process; aed short, bifid distally; cerci almost completely fused; hypcrct extending slightly beyond cerci.

Variation: ♂ similar to ♀.

Material examined: CAMEROUN: 1 ♂ Sawmill 10 mi W of Tekmo [3°09'N:12°05'E], 13.x.1966, Ross & Lorenzen, 710 m (CAS); 1 ♂ 3 ♀ 1?, N'Kolbisson [3°51'N:11°37'E], 31.iii.21.iv.1966 15.xii.1967 18.iii.1988 x.1969, de Mire (MNP); 1 ♀, N'Kolbisson, 17.x.1967, Tsacas, Lisiere (MNP); 1 ♀, Village Etoa [4°35'N:12°42'E], 4.xi.1969, de Mire (MNP). GHANA: 1 ♀, Kumasi, Ashanti [6°41'N:1°37'W], 18.x.1907, Graham (BM); 1 ♂, Ashanti Reg., Kumasi [6°45'N:1°35'W], K.N.U.S.T. 13.iii.1965, Acheampong, cocoa plantation (ZML). GUINEA: 1 ♂ 1 ♀ 1?, N'Zerekore [7°49'N:8°48'W], Fr Guinea, 20.iii.1950 29.iv.1953, Sv. Herold Olsen (ZMC). IVORY COAST: 1 ♂ (holotype) 1 ♀

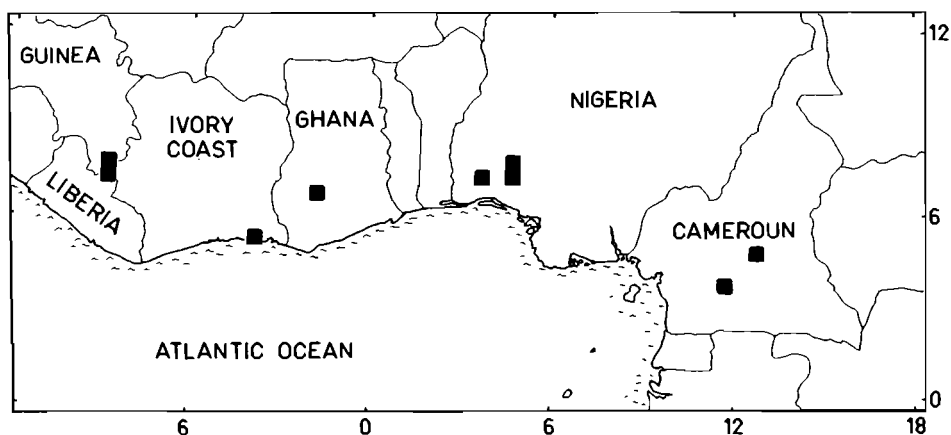


Fig. 45. *Damalis complecta* Oldroyd, distribution.

(paratype), Bingerville [5°21'N:3°54'W], ix.1962, Decelle (KMT). LIBERIA: 1 ♀, Vaa [7°27'N:8°56'W], 7.6'N 9.4'W, 31.vii.1953, Peters, L 49, 1 200 ft (BM). NIGERIA: 2 ♂ 1 ♀, Ile-Ife [7°28'N:4°34'E], 1 & 25.vii. & 1.viii.1970, Medler (BM); 1 ♂, Oshojbs [? Oshogbo—7°46'N:4°34'E] S Nigeria, 29.ix.1910, Open Air (ZSM); 1 ♂, Ibadan [7°23'N:3°56'E], ca i-iv.1954, Stenholt Clausen (ZMC). UNKNOWN COUNTRY: 1 ♀, Boukoko [?], 8.vi.1948 (SIW).

Distribution: Known from the West African countries of Cameroun, Ghana, Guinea, Ivory Coast, Liberia and Nigeria (Table 1, Fig. 45).

Biological data: Nothing known.

Relationship: Closely related to both *drilus* and *pollinosa*.

Damalis conspicua Curran, 1934 stat. rev.

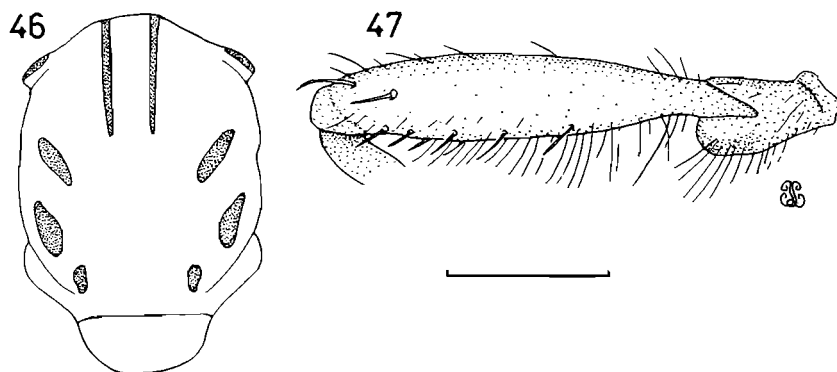
Figs 27, 46–47, 189–190

Damalis conspicua Curran, 1934: 10; Hull, 1962: 55.

Redescription: Based on ♂ from 'Brandkop area, Calvinia District' listed below (which was compared directly with the holotype ♂).

Head: Dark red-brown, lower half of face brown; silver pruinose. Antennal setae black and white; scape with poorly developed ventral protuberance; sockets abutting. Eye:face width ratio=2,0. Face gibbose in lower region; uniformly pruinose. Frons and vertex uniformly pruinose. Mystax composed of many black bristles occupying lower three-quarters of face. Palp yellow; fairly bulbous (ca three times longer than wide).

Thorax: Sct dark red-brown to black; gold-silver pruinose except for bare areas shown in Fig. 46. Pprn lb silver pruinose except for apruinose spot posteriorly; pal cal pruinose; major scutal setae moderately well developed, black; acr and dc strong, npl weak, sal moderate, pal strong. Two strong black sctl s; sctl uniformly pruinose except hind margin. Length:height ratio of scutum = 1,9. Postmetacoxal bridge complete. Pleura fine silver pruinose except for small apruinose spots on anepst and anepm. Wing 6,1 × 2,5 mm; microtrichia cover entire surface except for



Figs 46–47. *Damalis conspicua* Curran. 46. Pruinescence pattern of scutum. 47. Right metathoracic femur, anterior aspect. 46–47 = ♂ (Outskirts of Klawer).

distal tip; venation (Fig. 189); distal part of R_{2+3} gently curved anteriorly; membrane brown stained basally (up to level of r-m crossvein). Halter dull yellow-brown. Legs with femora and tibiae brown-yellow posterodorsally, dark red-brown anteroventrally; mesothoracic leg lacking processes; fem 3 = 3.0 mm (Fig. 47).

Abdomen: Terga dark red-brown to black; each tergum silver pruinose except for extensive posterodorsal shiny apruinose area; setae short black and white. Sterna similar but each with small apruinose median spot near posterior margin. Genitalia similar to *annulata* (see Figs 16–18).

Variation: ♂ similar to ♀ except that ♀ has microtrichia on wingtip (Fig. 190).

Material examined: SOUTH AFRICA: *Cape Province:* 1 ♀, Namaqualand, Port Nolloth [29°15'S:16°52'E], 2.x.1985, Gess (AM); 1 ♂ 1 ♀, 13 km E Port Nolloth, 2917AC, 3.ix.1983, Stuckenberg & Londt, westcoast strandveld (NM); 2 ♀, 12.5 mi SSW Springbok nr. Neweputs Farm, 2917DD, 7.ix.1972, Irwin, 2 600 ft (NM); 1 ♂ 1 ♀, 25 km N Kamieskroon, 2917DD, 5.ix.1983, Stuckenberg & Londt, rocky hillside veget. (NM); 1 ♀, Naib or Bushmansland, Btw Springbok and Pella [29°21'S:18°20'E], x.1939, Mus Staff (SAM); 7 ♂ 6 ♀, Namaqualand, Bowesdorp [30°09'S:17°52'E], ix.1941, SAM (SAM); 2 ♂ 1 ♀, Namaqualand, Bowesdorp, xi.1931, Mus Staff (SAM); 2 ♂ 1 ♀, Kamieskroon [30°12'S:17°56'E], ix.1930, Mus Staff (SAM); 1 ♀, 8 km E of Kamieskroon, 3018AA, 5.ix.1983, Londt & Stuckenberg, montane old land with rocks & bushes nearby (NM); 1 ♀, 10 km E Kamieskroon, 3018AA, 17.x.1977, Miller, 630 m (NM); 2 ♂ 1 ♀, Studers Pass 22 km NE of Garies, 3018AC, 6.ix.1982, Londt & Stuckenberg, stream edge & rocky slopes (NM); 1 ♀, 12 mi NNE Garies, 3018AC, 9.ix.1972, Irwin, nr waterfall, 1 350 ft (NM); 13 ♂ 12 ♀, outskirts of Klawer, 3118DC, 2.ix.1981, Londt Schoeman & Stuckenberg, Succulent Karoo (NM BM); 1 ♂ (holotype), Calvinia [31°19'S:19°11'E], 14.xi., Ogilvie (AMNH); 9 ♂ 5 ♀, Brandkop area, Calvinia District [31°15'S:19°11'E], 14.x.1964, Stuckenberg (NM); 1 ♀, Clanwilliam [32°11'S:18°54'E], ix.1928, Dr Brauns (NM); 1 ♀, 12 km SW Clanwilliam, Kransvlei, 3218BB, 5.x.1977, R. Miller (NM); 1 ♀, Clanwilliam, Nardouw [32°11'S:18°54'E], ix.1941, Mus Staff (SAM); 1 ♂, Bulhoek Klaver-Clanw. [32°11'S:18°54'E], x.1950, Mus Exp (SAM); 1 ♂ 1 ♀, Leipoldville-Eland's Bay [32°13'S:18°29'E], x.1947, Mus Exp (SAM); 1 ♂, 4.5 mi S Elandsbaai, 3218AD, 17.ix.1972, Irwin, coastal sand plain, 50 ft (NM); 1 ♂ 1 ♀, 1 mi S Nuwedam, 3218AD, 17.ix.1972, Irwin, coastal dunes, 30 ft (NM); 2 ♂ 1 ♀, Ysterfontein [3218AC], ix.1960, SAM (SAM); 1 ♂ 1 ♀, 3 km S Darling, 3318AD, 28.ix.1979, Londt, well veget. hillside above wheatlands (NM).

Distribution: Western Cape Province, South Africa (Table 1, Fig. 27).

Biological data: A species of the Cape macchia.

Discussion of synonymy: Oldroyd (1974) placed '? *conspicua* Curran' after the species *heterocera*. In 1981 he repeated this apparently tentative synonymy. The synonymy of *conspicua* with *heterocera* would be entirely incorrect. *D. conspicua* is however almost inseparable from *annulata*. The only reliable feature for their separation appears to be the pale-tipped wing of the ♂ (♀ specimens are

inseparable). *D. conspicua* could be a western subspecies of *annulata* (Fig. 21), but I am not prepared to give it such a status until more evidence is available.

Relationship: Most closely related to *annulata* but also to *xaniomerus*.

Damalis cylindrica Hull, 1967 stat. rev.

Figs 48–53, 191

Damalis cylindrica Hull, 1967: 235.

Xenomyza cylindrica; Oldroyd, 1980: 372.

Redescription: Based on holotype ♂ (South Africa, Hout Bay).

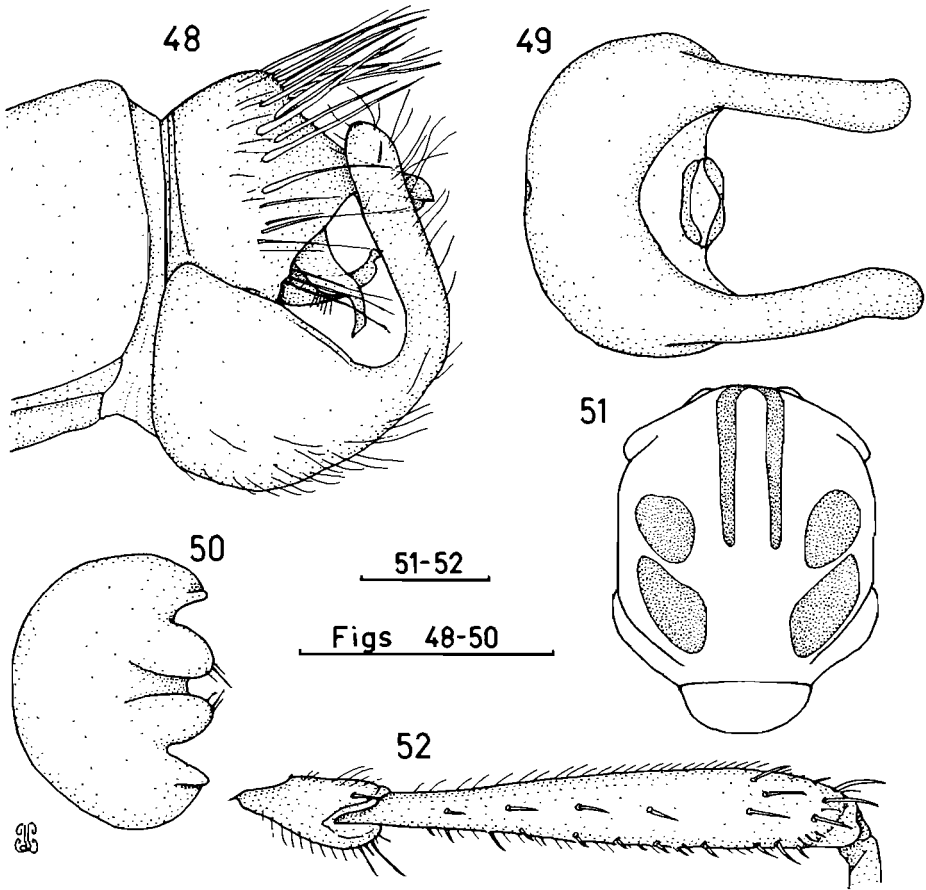
Head: Dark red-brown, lower half of face brown-yellow; silver pruinose. Antennal setae black; scape with poorly developed ventral protuberance; sockets abutting. Eye: Face width ratio = 1,8. Face gibbose in lower region; pruinose except for lower half which is largely shiny apruinose. Frons and vertex pruinose except for ocellar tubercle. Mystax composed of many black bristles covering more than three-quarters of face. Palp yellow; slightly swollen.

Thorax: Sct dark red-brown with brown-yellow lateral and posterior margins; silver and fine red-gold pruinose except for shiny apruinose areas (Fig. 51). Pprn lb and pal cal uniformly pruinose; major scutal setae reasonably well differentiated, black; 3–4 npl, 1 sal, 2 pal, acr and dc not obvious. 4 black sctl s; sctl uniformly silver pruinose. Length:height ratio of scutum = 2,0. Postmetacoxal bridge complete. Pleura silver pruinose except for shiny apruinose area on anepm. Wing 6,0 × 2,2 mm; microtrichia cover entire surface; venation (Fig. 191—Franschhoek Pass ♀); distal part of R_{2+3} gently curved anteriorly; membrane uniformly unstained. Halter brown-yellow. Legs brown-yellow, fem 2 and 3 red-brown anteriorly; mesothoracic leg lacking processes; fem 3 = 3,7 mm (Fig. 52).

Abdomen: Terga dark red-brown, orange laterally; largely shiny apruinose except for anterior strip; setae short dark red-brown medially, longer white laterally. Sterna brown-yellow; largely shiny apruinose, silver pruinose anteriorly; setae fine white. Genitalia (Figs 48–50—Jonkershoek ♂) orange; epand upturned through an angle of more than 90°; hypd bilobed distally; cerci completely fused; hypcrct approximately same length as cerci.

Variation: ♂ similar to ♀.

Material examined: SOUTH AFRICA: *Cape Province*: 1 ♀, Nieuwoudtv [Nieuwoudtville 31°22'S:19°06'E], xii.1956, Giliomee (NM); 1 ♀, Cedarbergen [Cedarberg Mts 32°26'S:19°13'E], i.1930, Barnard (SAM); 2 ♀, Cape Town, Milnerton [33°52'S:18°29'E], i.1926, Turner (BM); 1 ♀, Cape Town [33°56'S:18°28'E], 3.xii.1976, Geertsema (NCI); 12♂ 8 ♀ 1?, Jonkershoek, Stellenbosch Dist. [33°58'S:18°58'E], 7 11 13.xii.1979 7.i. 5 15.xii.1980, Giliomee (NM); 2 ♂ 1 ♀, Stellenb. [Stellenbosch 33°56'S:18°51'E], 11 87 xi. 1887, LP (ZSM SAM); 3 ♂ 4 ♀, Franschhoek Pass, 3319CC, 21.xi.1986, Londt & Quickelberge, Grass & macchia on summit of pass, 800 m (NM); 1 ♀, French Hoek [33°55'S:19°07'E], i.1937, Wood (SAM); 1 ♀, Ceres Dis., Matroosberg [33°23'S:19°39'E], i.1917, Lightfoot, 5 000 ft (SAM); 2 ♀, Mitchells Pass, nr Ceres, 100 m from Cape Town [33°24'S:19°17'E], 1–5.xii.1930, Simmonds (BM); 2 ♂, 15 km E of Wellington,



Figs 48–52. *Damalis cylindrica* Hull. 48–50. ♂ genitalia. 48. Lateral. 49. Ventral. 50. Dorsal. 51. Pruinescence pattern of scutum. 52. Right metathoracic femur, anterior aspect. 48–50 = holotype (Hout Bay); 51–52 = ♂ (Jonkershoek).

Bain's Kloof, 3319CA, 22.xi.1986, Londt & Quickelberge, Grassy slopes Rocks, 550 m (NM); 1 ♂, 7 Weeks Poort Berg, Ladismith [33°22'S:21°25'E], 25–31.xii.1928, Barnard, 5 500–7 000 ft (SAM); 1 ♀, Prince Alfreds Pass [33°47'S:23°09'E], Avontuur Poort, i.1940, Mus Staff (SAM); 1 ♂ holotype, Cape Peninsula, Hout Bay, Skoorsteenkop [3418AB], 13.xii.1950, No. 82, Swedish S.A. Exp. 1950–1951, Brink–Rudebeck (ZML); 1 ♀ allotype, Cape Peninsula, Hout Bay, Skoorsteenkop, 2.ii.1951, No. 166, Swedish S.A. Exp. 1950–1951, Brink–Rudebeck (ZML); 1 ♂ 1? paratypes, Cape Peninsula, Hout Bay, Skoorsteenkop, 26.xii.1950, No. 95, Swedish S.A. Exp. 1950–1951, Brink–Rudebeck (ZML); 1 ♂ 2 ♀, Silvermine N. R., Cape Penin. [34°08'S:18°26'E], 2–3.i.1972, Southern African Exp. (BM); 1 ♀, Chapmans Peak Drive, Houtbaai, 34°04'S:18°21'E, 22–24.xi.1982, Eardley & Oberprieler (NCI); 5 ♀, Hott. Holl. Mts, East side [34°07'S:18°56'E], i.1933, Barnard, 4 000 ft (SAM); 1 ♂, Gordonsbay [Gordon's Bay 34°10'S:18°52'E], 30.ix.1930, Ac.US (NM); 1 ♂, Shaws mf, nr Caledon, 50 m

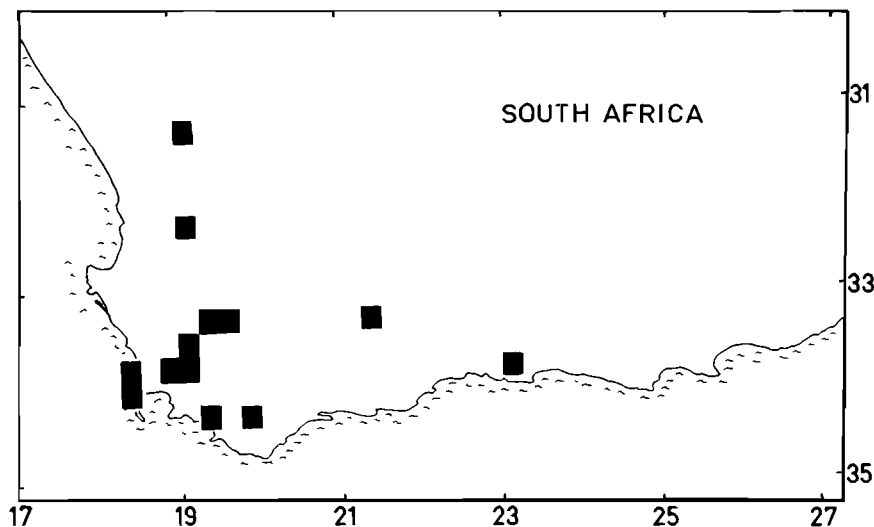


Fig. 53. *Damalis cylindrica* Hull, distribution.

from Cape Town [34°17'S:19°25'E], xi–xii.1930, Simmonds (BM); 1 ♂ 2 ♀, R Sonder End [34°19'S:19°54'E], Oudebosch, Barnard, xi–xii.1928, 1 500 ft (SAM). Distribution: Winter rainfall region of the Cape Province, South Africa (Table 1, Fig. 53).

Biological data: I have collected specimens in rank vegetation on steep hillside slopes.

Relationship: Most closely related to *furcula* but also related to *heterocera* and *elongatus*.

***Damalis doryphorus* sp. n.**

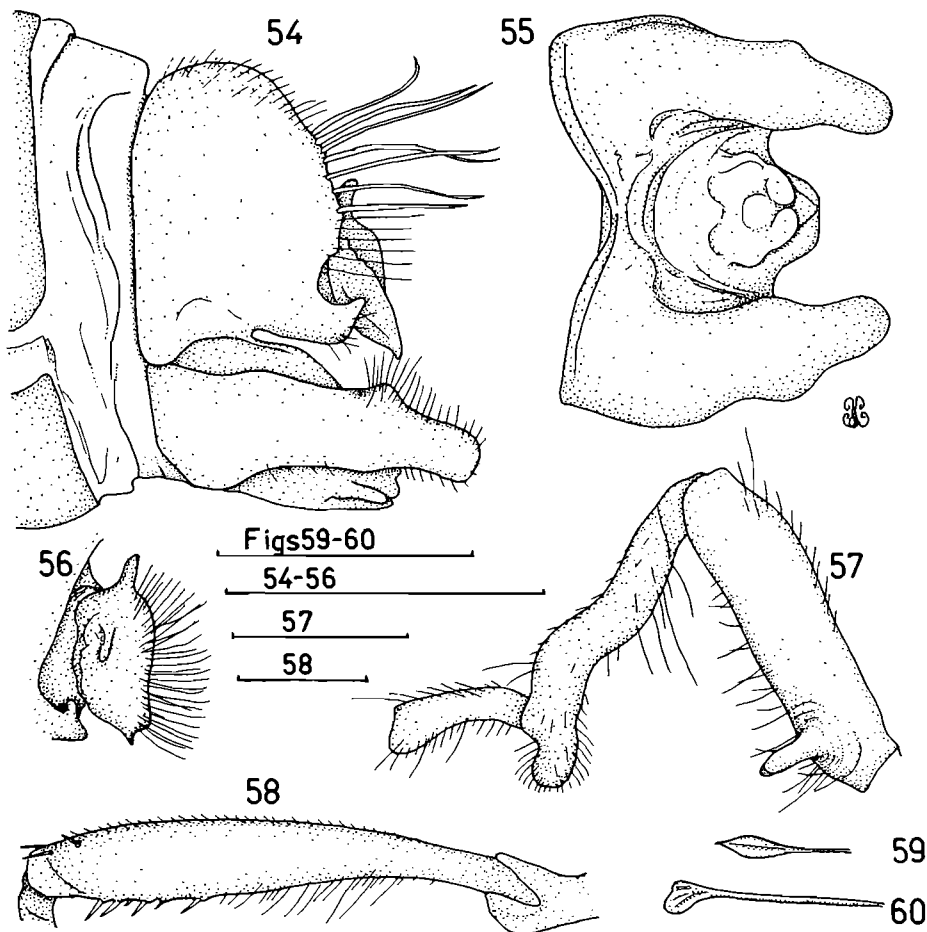
Figs 54–61, 192

Etymology: Gr. *doryphoros* = spear-bearing. Refers to lanceolate setae of male metathoracic tarsi.

Description: Based on holotype ♂ (South Africa, Pongolo Bush).

Head: Black, silver pruinose. Antennal setae black; scape with dorsal protuberance; sockets abutting. Eye:face width ratio = 1,9. Lower part of face slightly gibbose and shiny apruinose. Frons and vertex uniformly pruinose. Mystax composed of many black bristles on lower half of face. Palp black; slender fusiform.

Thorax: Sct black; uniform silver pruinose. Pprn lb uniformly pruinose; pal cal pruinose except for small apruinose spot posteriorly adjoining scutellum; major scutal setae not clearly differentiated. 6 black sctl s; sctl pruinose except for hind margin. Length:height ratio of scutum = 2,0. Posterior margins of metepimera extended slightly posteromedially (Fig. 4). Pleura silver pruinose except for upper hind corner of anepst which is shiny apruinose. Wing 7,2 × 2,5 mm; microtrichia



Figs 54-60. *Damalis doryphorus* sp. n. 54-56. ♂ genitalia. 54. Lateral. 55. Ventral. 56. Gonocoxite. 57. Right mesothoracic leg, anterior aspect, showing processes. 58. Right metathoracic femur, anterior aspect. 59-60. ♂ metatarsal setae. 59. De Hoek. 60. Pongola Bush. 54-56 = paratype ♂ (Berlin Falls); 57, 60 = paratype ♂ (De Hoek); 58-60 = holotype ♂ (Pongolo Bush).

cover entire surface; venation (Fig. 192—Berlin Falls ♀ paratype) yellowish anteriorly; R_{2+3} almost straight; membrane uniformly unstained. Halter brown-yellow. Legs black, tibiae brown-yellow dorsoproximally; mesothoracic leg with cx fem and tib processes (Fig. 57); fem 3 = 3,5 mm (Fig. 58); some setae of hind tarsi lanceolate (Fig. 59), rarely spatulate (Fig. 60).

Abdomen: Terga black; except for narrow posterior margin silver pruinose; setae short shiny white. Sterna similar but shiny apruinose centrally. Genitalia (Figs 54-56—Berlin Falls ♂); epand lobes joined by narrow bridge; goncx leaf-like with dorsal finger-like process; cerci not completely fused distally; hypcrct of similar length as cerci.

Variation: ♀ similar to ♂ but gold pruinose.

Material examined: All specimens are paratypes except for holotype. SOUTH AFRICA: *Transvaal*: 1 ♀, Zoutpansberg, Louis Trichardt [22°03'S:29°54'E], ii.1928, R. F. Lawrence, 4 500 ft (SAM); 1 ♂ 1 ♀, De Hoek Forestry [2329DD], 9–12.iii.1973, L & G. Vari (NM); 1 ♀, Magoebaskloof [23°51'S:30°02'E], ii.1977, G. L. Prinsloo (NCI); 1 ♂, Woodbush [23°47'S:30°04'E], 14.iv.1924, J.C.F. H. K. Munro (NCI); 1 ♂ 4 ♀, Woodbush, ii.1977, G. L. Prinsloo (NCI); 1 ♂, Letsitele [23°53'S:30°24'E], 23.ii.1977, G. L. Prinsloo (NCI); 1 ♀, Tsaneen, SE3023CC [actually 2330CC], 21.ii.1981, C v/d Hoven (NM); 11 ♂ 9 ♀ 3?, Marieps Mtn [24°32'S:30°52'E], iv.1932, 15 20.iv.1948, G. van Son (NM); 2 ♂ 3 ♀, Above

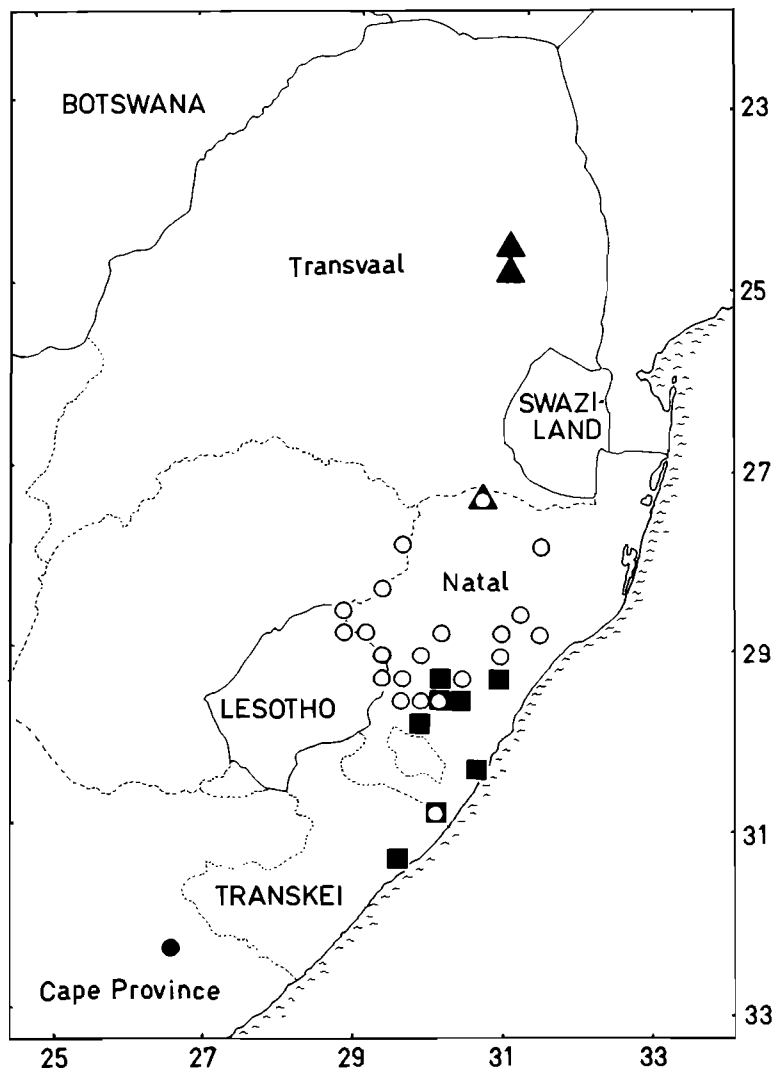


Fig. 61. *Damalis doryphorus* sp. n. (▲), *D. femoralis* Ricardo (○), *D. monochaetes* sp. n. (■) and *D. turneri* sp. n. (●) distribution.

Berlin Falls, N of Graskop, SE2430DD, 14.iv.1985, J. Londt, riverine veget. (NM); 1 ♂, Pelgrimsrus, SE2430DD, 19.iv.1979, J. Irish, Dept. Ento. Univ. Pretoria; 3 ♂, Drakensberg Mts., 12 mi W Klaserie [24°33'S:31°02'E], 29.iii.1958, E. S. Ross & R. E. Leech, 1 275 m (CAS). *Natal*: 8 ♂ (holotype) 10 ♀, Pongolo Bush Nat. Res., 27°19'20"S:30°29'35"E, 20.iv.1988, J. G. H. Londt, 1 580 m, Montane Podocarpus For., Grass nr forest (NM BM); 1 ♂, Pongolo-bush Nat. Res., 15 km W Luneburg, 2730BC, 19.ii.1979, J. Londt, forest & surrounding area (NM). NM Type No. 5.

Distribution: Eastern escarpment of Transvaal, extending into northern Natal, South Africa (Table 1, Fig. 61).

Biological data: I have collected the species in long grass adjacent to forest patches.

Relationship: Closely related to *turneri*, *femoralis* and *monochaetes*.

***Damalis drilus* sp. n.**

Figs 62–65, 193

Ethology: Gr. m. *drilos* = penis. Refers to the elaborate development of the aedeagus.

Description: Based on holotype ♂ (Uganda, Entebbe) except where stated.

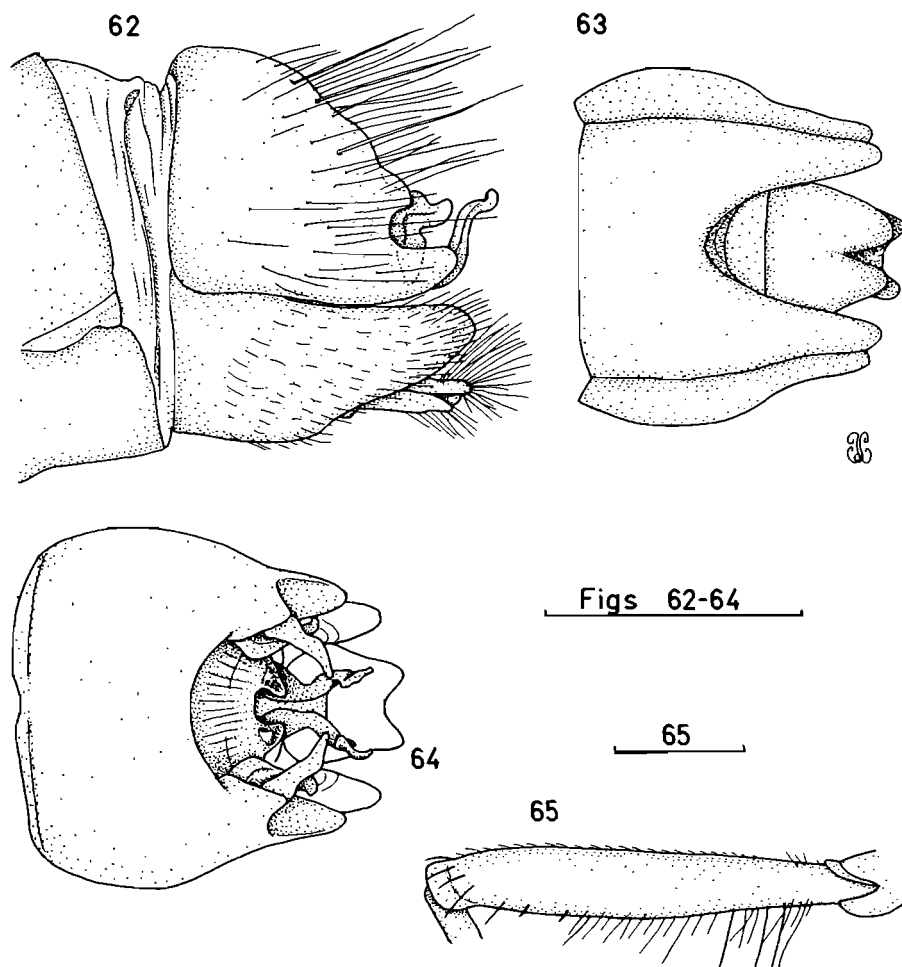
Head: Yellow-brown, fine gold-red pruinose. Antennal setae red-brown; scape with poorly developed dorsal protuberance only; sockets abutting. Eye: face width ratio = 2,2. Face flat, lower facial margin depressed; lower three-quarters shiny apruinose. Frons and vertex pruinose except for shiny apruinose ocellar tubercle. Mystax composed of 5 weakish, black bristles on lower facial margin (there are also fine upwardly directed red-brown setae over entire face). Palp brown; slender fusiform.

Thorax: Sct dark-brown; uniformly fine gold-red pruinose. Pprn lb pruinose except for a tiny shiny apruinose posterior spot; pal cal pruinose except for a tiny shiny apruinose spot medially; major scutal setae weakly differentiated. 7 yellow upwardly directed sctl s; sctl silver pruinose except for hind margin. Length: height ratio of scutum = 2,2. Postmetacoxal area entirely membranous. Pleura including anepst and anepm uniform gold-red pruinose. Wing 7,5 × 2,5 mm; microtrichia absent from entire surface; venation (Fig. 193—♀ paratype illustrated); R₂₊₃ straight, tip slightly posteriorly deflected; membrane uniformly unstained. Halter brown-yellow. Legs uniform yellow-brown, tips of femora dark red-brown anteriorly and posteriorly; mesothoracic leg lacking processes; fem 3 = 3,2 mm (Fig. 65).

Abdomen: Terga dark red-brown; fine gold-red pruinose except for posterior margins; setae short dark red-brown medially, longish shiny white laterally: similar but uniformly fine silver pruinose; setae shortish shiny white. Genitalia (Figs 62–64 paratype illustrated) very similar to *pollinosa* but for elaborate development of aedeagus.

Variation: ♂ similar to ♀ but with wing membrane slightly yellow stained.

Material examined: UGANDA: 2 ♂ (holotype & paratype) 2 ♀ (paratypes), 7 mls from Entebbe [0°04'N:32°28'E], Zika Forest, iii–iv.1961, P. S. Corbet, BM



Figs 62-65. *Damalis drilus* sp. n. 62-64. ♂ genitalia. 62. Lateral. 63. Ventral. 64. Gonocoxite. 65. Right metathoracic femur, anterior aspect. 62-64=paratype ♂ (7 mi from Entebbe); 65 =holotype ♂ (7 mi from Entebbe).

1961—341, 80' level on steel tower (BM); 3 ♂ 4 ♀ (paratypes), same but 120' level on steel tower on margin of lakeside swamp (BM NM); 1 ♀ (paratype), same but 60' level on steel tower (BM); 2 ♀ (paratypes), same but 100' level on steel tower (BM); 1 ♀ (paratype), same but no data on level (BM); 1 ♀, Kampala [0°19'N:32°35'E], 4.iv.1939, Hargreaves (SIW); 1 ♀, Burna [illegible], 4.iv.1913, caught on *Coccystes jacobinus* (SIW). NM Type No. 6.

Distribution: Known only from Uganda (Table 1).

Biological data: Nothing known.

Relationship: Most closely related to *pollinosa* but also related to *complexa* and more distantly to *achilles* and *hyalipennis*.

Damalis elongatus Hull, 1962 **stat. rev.**

Figs 66–70, 194

Damalis (Protodamalis) elongatus Hull, 1962: 55.*Xenomyza elongata*; Oldroyd, 1974: 127; Oldroyd, 1980: 372.

Redescription: Based on topotypic ♂ (South Africa, Willow Grange).

Head: Dark, red-brown, gold-silver pruinose. Antennal setae yellow; scape without ventral and dorsal protuberances; sockets widely separated. Eye:face width ratio = 1,1. Face strongly gibbose (Fig. 69); uniformly pruinose. Frons and vertex uniformly pruinose. Mystax composed of many pale yellow (few dark brown in upper part) bristles on entire face. Palp yellow; somewhat swollen.

Thorax: Sct dark red-brown; silver and silver-gold pruinose except for 2 shiny apruinose postsutural areas. Pprn lb and pal cal uniformly pruinose; major scutal setae not clearly differentiated. Ca 15 fine pale yellow-white sctl s; sctl uniformly pruinose. Length:height ratio of scutum = 3,2. Postmetacoxal bridge complete, narrow. Pleura excluding part of anepm uniform fine gold-silver pruinose. Wing 10,9 × 3,6 mm; microtrichia cover entire surface; venation (Fig. 194—Willow Grange topotype); distal part of R₂₊₃ very gently curved anteriorly; membrane uniformly unstained. Halter red-yellow. Legs pale yellow to brown-yellow, fem 2 and 3 with red-brown patch anterodistally; mesothoracic leg lacking processes; fem 3 = 5,8 mm (Fig. 70).

Abdomen: Terga dark red-brown; entirely dull gold pruinose; setae short pale yellowish (hardly noticeable). Sterna yellow; fine silver pruinose; setae as for terga. Genitalia (Figs 66–68 paralectotype ♂); epand lobes upturned through ca 90° at about midlength; cerci completely fused; hypcrct ca same length as cerci.

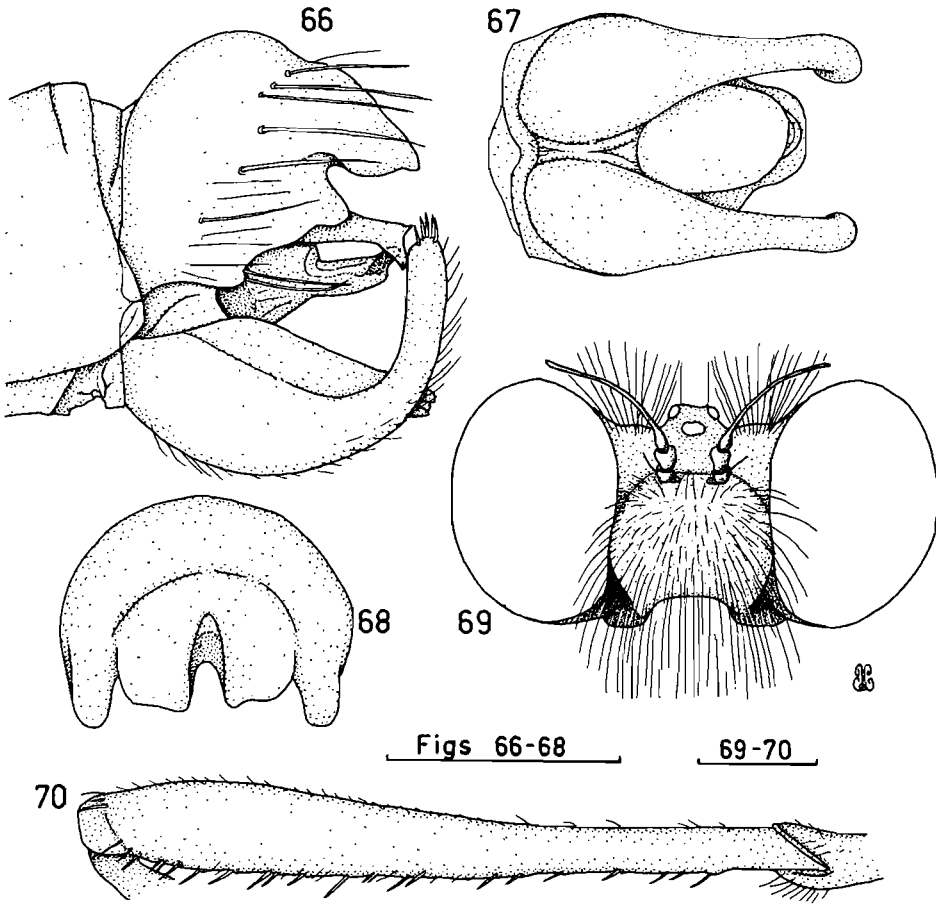
Variation: ♂ similar to ♀.

Material examined: SOUTH AFRICA: *Natal*: 3 ♂ 2 ♀, Willow Grange [29°03'S:29°57'E], Will Brook, 12 & 25.iii.1914, R. C. Wroughton (BM); 1 ♀, Willow Grange, 15.iii.1914, R. C. Wroughton (BM); 1 ♂, Will Brook, 7.iii.1914, R. C. Wroughton (BM); 1 ♀, Giants Castle G. Res., 2929AD, 16.ii.1983, D. Barraclough, montane grassland (NM); 1 ♀, Kloof [Krantzkloof—2930DD], v.1915, Marley (SAM); 1 ♂, Pinetown [29°49'S:30°51'E], 29.iv.1920, C. N. Barker (DM). *Note:* I have not seen the BM holotype but assume it to be similar to other specimens with similar data.

Distribution: Recorded only from Natal, South Africa (Table 1). Note that Wroughton used both the terms Willow Grange and Will Brook, sometimes on the same label. These are two different places. Will Brook is the name of a farm about 10 km SW of Willow Grange.

Biological data: Apparently a grassland species. A ♂ specimen from Willow Grange carries the label 'Differs from other Asilids (?) / Heavy Flight so [followed by an undulating line] / Hind legs hanging down / Shams dead in net RCW'. This note concerning shamming dead (catalepsy) is of interest as most species of *Damalis* collected by me do this. The cataleptic period is usually quite short.

Relationship: Most closely related to *heterocera* but also related more distantly to *furcula* and *cylindrica*.



Figs 66–70. *Damalis elongatus* Hull. 66–68. ♂ genitalia. 66. Lateral. 67. Ventral. 68. Dorsal. 69. Head, anterior aspect. 70. Right metathoracic femur, anterior aspect. 66–70 = paralectotype ♂ (Willow Grange).

Damalis femoralis Ricardo, 1925 stat. rev.

Figs 61, 71–77, 195

Damalis femoralis Ricardo, 1925: 247; Theodor, 1976: 79; Hull, 1962: 55.

Damalis (Lophurodamalis) femoralis; Hull, 1967: 234.

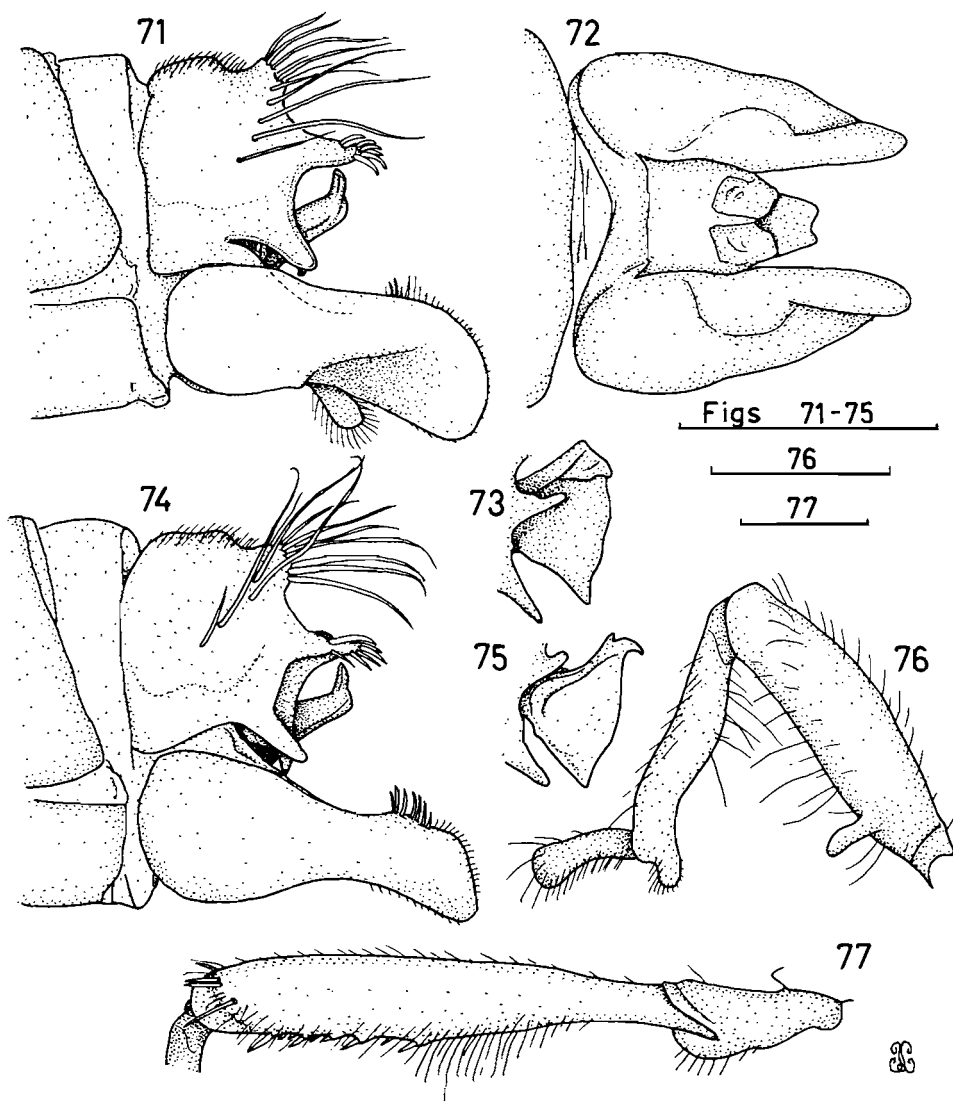
Xenomyza femoralis; Oldroyd, 1974: 130; Oldroyd, 1980: 372.

Redescription: Based on lectotype ♂ (South Africa, Willow Grange).

Head: Black, silver pruinose. Antennal setae black; scape with poorly developed ventral and dorsal protuberances; sockets abutting. Eye: face width ratio = 1,9. Lower part of face slightly gibbose and shiny apruinose. Frons and vertex uniformly pruinose. Mystax composed of many black bristles on lower two-thirds of face. Palp black; slender fusiform.

Thorax: Sct black; uniform gold-silver pruinose. Pprn lb and pal cal uniformly pruinose; major scutal setae not clearly differentiated. 7 black scutal s (1 rather

small); sctl pruinose except for hind margin. Length:height ratio of scutum = 2,0. Posterior margins of metepimera extended slightly posteromedially (Fig. 4). Pleura silver pruinose except for upper hind corner of anepist which is shiny apruinose. Wing $7,5 \times 2,8$ mm; microtrichia cover entire surface; venation (Fig. 195—Cathedral Peak ♀) yellowish anteriorly; R_{2+3} straight; membrane uniformly unstained. Halter brown-yellow. Legs black, tibiae brown-yellow dorso-



Figs 71-77. *Damalis femoralis* Ricardo. 71-75. ♂ genitalia. 71-73. Umtamvuna ♂. 71. Lateral. 72. Ventral. 73. Gonocoxite. 74-75. Cathedral Peak ♂. 74. Lateral. 75. Gonocoxite. 76. Right mesothoracic leg, anterior aspect, showing processes. 77. Metathoracic femur, anterior aspect. 71-73 = ♂ (Umtamvuna); 74-77 = ♂ (Cathedral Peak).

proximally; mesothoracic leg with cx fem and tib processes (Fig. 76); fem 3=3,5 mm (Fig. 77).

Abdomen: Terga black; except for narrow posterior margin silver pruinose; setae short shiny white. Sterna similar but each is shiny apruinose centrally on anterior margin (T2–3). Genitalia (Figs 71–73—Umtamvuna & 74–75—Cathedral Peak ♂); epand lobes joined by narrow bridge; goncx phylliform with dorsal hook-like process; cerci not completely fused distally; hypcrt of similar length as cerci.

Variation: ♂ similar to ♀. ♂ specimens from certain localities have slightly deeper epandrial lobes. This difference is considered intraspecific.

Material examined: SOUTH AFRICA: *Natal:* 3 ♀, Normandien Forest Res., 27°57'45"S:29°41'03"E, 19.iv.1988, Londt, 1 950 m, Montane Podocarpus Forest margins (NM); 8 ♂ 5 ♀, Pongolo-bush Nat Res, 15 km W Luneburg, 2730BC, 19.ii.1979, Londt, forest & surrounding area (NM); 1 ♂ 1 ♀, Pongolo Bush Nat. Res., 27°19'20"S:30°29'35"E, 20.iv.1988, Londt, 1 580 m, montane Podocarpus For., Grass nr forest (NM); 2 ♂ 3 ♀, Ngome Forest between Vryheid & Nongoma [27°52'S:31°24'E], 11–12.iv.1960, Stuckenberg (NM); 1 ♂ 1 ♀, Natal National Park [28°41'S:28°59'E], iii.1932, Mackie (BM); 1 ♂, Natal National Park, iii.1932, Ogilvie (BM); 1 ♀, Natal National Park, iii.1932, Ogilvie (BM); 12 ♂ 10 ♀, Royal Natal Nat. Park, 28°41'S:28°59'E, 18.iii.1989, Londt, Tiger Falls & Sundays Falls areas (NM); 1 ♀, Bergville dist, Mont-aux-Sources [2828DD], 5.iv.1954, Balfour-Browne, ca 6 500 ft, rough scrub (BM); 1 ♂, Bergville dist, Cathedral Peak [28°57'S:29°12'E], 3.iv.1954, Balfour-Browne, ca 6 000 ft, in open scrub (BM); 10 ♂ 18 ♀, Cathedral Peak area, Forest Reserve, 2829CC, 4–11.iv.1977, Londt, 1 800 m (NM); 8 ♂ 7 ♀, Cathedral Peak area, 2829CC, 7–12.iv.1982 5–6.ii.1983, Londt, ex malaise (NM); 7 ♂ 1 ♀, Cathedral Peak area, Ukhahlamba Res. Stn., 2829CC, 18.iii.1986, Londt (NM); 1 ♂, Cathedral Peak area, Ukhahlamba Res. Stn., 2829CC, 26.ii.1984, Griswold, above 1 700 m (NM); 1 ♂, Cathedral Peak area, Indumeni Forest, 23.iii.1955, Stuckenberg (NM); 1 ♀, Cathedral Peak area, 23.iii.1955, Stuckenberg, Alt 6 400 ft (NM); 2 ♂, Cathedral Peak Forestry Reserve, iii.1959, Stuckenberg, little berg summits Themeda grassland, 5 500–6 000 ft (NM); 1 ♀, Cathedral Peak area above Mike's Pass, 28°59'S:29°14'E, 28–29.iii.1985, Eardley, 1 973 m (NCI); 1 ♂ 1 ♀, Cathedral Peak, Mike's Pass, 24.ii.1984, Moolman, 1 700 m (NCI); 1 ♀, Van Reenen Pass, 2829AD, 1.iii.1981, Stuckenberg (NM); 1 ♂, nr. Weenen [28°51'S:30°05'E], 30.i.1929, Thomasset (BM); 1 ♀, Ekombe For., 39 mi N Krantzkop [Ekombe Mission—28°58'S:30°52'E], 10.iv.1958, Ross & Leech, 1 520 m (CAS); 1 ♂ 1 ♀, Solitude, 2830DD, 14.ii.1981, Feijen (NM); 12 ♂ 9 ♀, Nkandhla Forest Res., 28°44'35"S:31°09'00"E, 27.iv.1988, Londt, 1 000 m, Mistbelt Mixed Forest margins (NM); 1 ♀, Nkandla, 2831CA, 8.iv.1979, Reavell, Ngomgoni veld (NM); 1 ♀, Nkandla, SE2831CA, 30.iii.1980, Oberprieler (NM); 2 ♂ 9 ♀, Entumeni Nature Res., 28°52'35"S:31°22'54"E, 28.iv.1988, Londt, 720 m, Coast Scarp For. Wooded grassland area (NM); 1 ♂ 1 ♀ Zululand, Eshowe [28°53'S:31°28'E], 23–31.iii.1926, Turner (BM); 1 ♂ 3 ♀, Eshowe [28°53'S:31°28'E], 8.iv.1958, Ross & Leech, 480 m (CAS); 1 ♂, Cathkin Peak [29°01'S:29°19'E], i.1941, Lawrence (SAM); 1 ♂ (lectotype) 2 ♂ 4 ♀ (paralectotypes), Willow Grange

[29°03'S:29°57'E] Will Brook, 26.iii.1914, R. C. Wroughton (BM); 1?, Willow Grange, Will Brook, Wroughton (SAM); 2 ♂ 1 ♀, Will Brook, 4.iii.1914, Wroughton (BM); 5 ♂ 6 ♀, Willow Grange, 8 26.iii.1914 4.iii.1916, Wroughton (SIW); 12 ♂ 16 ♀, Loteni Nature Res., 2929BC, 28.iii.–2.iv.1986, Londt, camp-site/grassveld (NM); 3 ♂ 4 ♀, Loteni 2929DA, 2 & 7 ii.1981, Feijen (NM); 1 ♂ 2 ♀, Loteni Nat. Park, 6.iv.1972, Irwin (NM); 2 ♂ 1 ♀, Giants Castle G. Res., 2929AD, 16.ii.1983, Barraclough, montane grassland (NM); 2 ♂ 3 ♀, Giants Castle, 2929AB, 8 10 & 11.ii.1981, Feijen (NM); 1 ♂ 1 ♀, Boston [29°40'S:29°58'E], 26.iii.1980, Londt (NM); 3 ♂ 2 ♀, 10 km S Dargle [29°30'S:30°01'E], 26.iii.1980, Londt (NM); 4 ♂ 5 ♀, The Kop, Krantz kop, 2930BB, 8.iv.1986, Londt, grassveld (NM); 3 ♂, The Start Stud Farm, 20 km NE Howick, 2930AD, 10.iv.1986, Londt, scrub grass nr stream in small valley (NM); 1 ♀, Durban [29°51'S:31°01'E], 1914, Haygarth (SAM); 11 ♂ 9 ♀, Umtamvuna Nature Res., SE3030CC, 25–27.iii.1985, Londt, open grass & forest margin (NM); 1 ♀, Kwanzimela ?, 3.iii.1986, Reavell, Ngomgoni veld (NM).

Distribution: Fairly widely distributed in Natal, South Africa (Table 1, Fig. 61).

Biological data: A species inhabiting long grass near indigenous forest patches. I have assembled 43 prey items, belonging to five insect orders, for this species as follows: 8 *Coleoptera*—Staphylinidae (6), ? Scarabaeidae (1), ? (1); 8 *Diptera*—Empididae (3), Phoridae (1), Culicidae (1), Tipulidae (1), ? Lauxaniidae (1), ? (1); 11 *Hemiptera*—Cicadellidae (5); Aphididae (1); Lygaeidae (3), Miridae (1), ? Anthocoridae (1); 15 *Hymenoptera*—Formicidae (9), Platygasteridae (2), Halictidae (1), Ichneumonidae (1), ? Torymidae (1), ? (1); 1 *Psocoptera*—Psyllipsocidae (1).

Relationship: Most closely related to *monochaetes* but also related to *turneri* and *doryphorus*.

***Damalis furcula* sp. n.**

Figs 78–83, 196

Etymology: L. dim. *furcula* = small fork. Refers to pronged hypandrium.

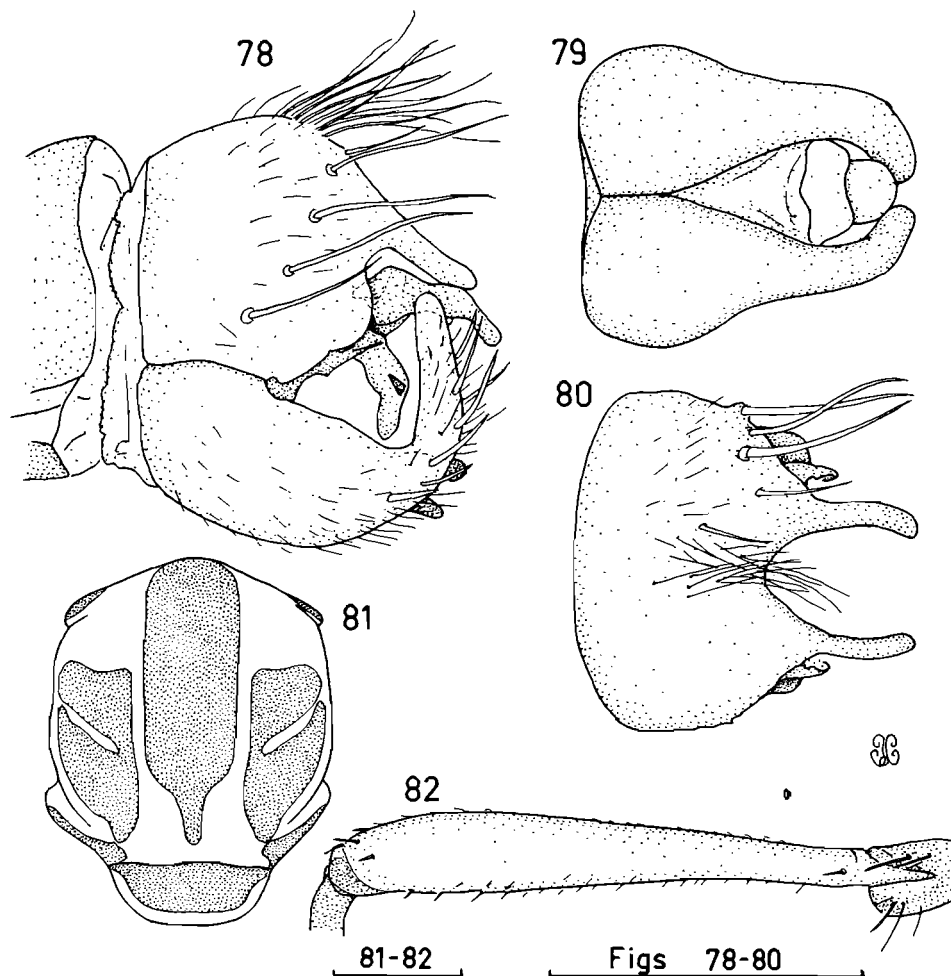
Description: Based on holotype ♂ (South Africa, Du Toits Kloof).

Head: Black, silver pruinose. Antennal setae black; scape with poorly developed ventral protuberance; sockets not abutting. Eye: face width ratio = 1.8. Face moderately gibbose; pruinose except for largely apruinose central part. Frons and vertex pruinose except for apruinose strip extending from frons through ocellar tubercle and on to occiput. Mystax composed of many black bristles covering almost entire face. Palp yellow-brown; slender, fusiform.

Thorax: Sct dark red-brown with brown-yellow lateral margins; gold-silver pruinose except for shiny apruinose areas (Fig. 81). Pprn lb apruinose; pal cal pruinose except for a small area posteriorly adjacent to sctl; major scutal setae not well differentiated, black, 2 npl fairly obvious. 4 black sctl s (2 pairs widely separated); sctl silver pruinose except for disc. Length: height ratio of scutum = 2.5. Posterior margins of metepimera extended posteromedially to the point where they touch,

but do not fuse together to form a complete bridge (Fig. 7). Pleura gold-silver pruinose except for small shiny apruinose area on anepst. Wing $6,8 \times 2,6$ mm; microtrichia cover entire surface; venation (Fig. 196—Du Toits Kloof ♀); distal part of R_{2+3} gently curved anteriorly; membrane uniformly brown-stained except for wing tip and narrow posterior strip. Halter yellow-brown. Legs yellow-brown, tarsi and anterior parts of fem 2 and 3 red-brown; mesothoracic leg lacking processes; fem 3 = 4,2 mm (Fig. 82).

Abdomen: Terga brown-yellow, T2 dark red-brown anteriorly; largely shiny apruinose except for narrow anterior strip; setae short dark red-brown medially, few longer white laterally. Sterna brown-yellow; largely shiny apruinose, silver pruinose anteriorly and laterally; setae fine white. Genitalia (Figs 78–80—Du Toits



Figs 78–82. *Damalis furcula* sp. n. 78–80. ♂ genitalia. 78. Lateral. 79. Ventral. 80. Dorsal. 81. Pruinescence pattern of scutum. 82. Right metathoracic femur, anterior aspect. 78–80 = paratype ♂ (Du Toits Kloof); 81–82 = holotype ♂ (Du Toits Kloof).

Kloof ♂) orange; epand upturned through an angle of more than 90°; hypd with two finger-like processes distally; cerci completely fused; hyprect slightly longer than cerci.

Variation: ♂ similar to ♀.

Material examined: SOUTH AFRICA: *Cape Province*: 2 ♂ 2 ♀ 2?, 6 mi W Nieuwoudtville, 3119AC, 11.ix.1972, Irwin, near top of escarpment, 2 500 ft (NM); 2 ♂ 10 ♀, Brandkop area Calvinia District [31°17'S:19°09'E], 14.x.1964, Stuckenberg (NM); 1 ♂, Het Kruis [32°25'S:18°44'E], x.1947, Mus. Exp. (SAM); 18 ♂ 12 ♀ 2?, Leipoldtville—Eland's Bay [32°13'S:18°29'E], x.1947, Mus. Exped. (SAM); 2 ♀, Clanwilliam [3218BB], ix.1928, Brauns (NM); 1 ♂, 30 km E Clanwilliam, 6.ix.1983, Freidberg (NM); 1 ♂, Clanwilliam District, Witelskloof, 32°20'35"S:18°48'E, 13.x.1987, Gess (AM); 1 ♂ 1 ♀, Pakhuis Pass, Clanwilliam Dist. [32°08'S:19°00'E], 17–19.x.1964, Stuckenberg, 950 m (NM); 1 ♀, Pakhuis Pass, Clanwilliam, ix.1936, Mus Staff (SAM); 5 ♂ 7 ♀, 87 m N Citrusdal [32°35'S:19°01'E], ix.1961, SAM (SAM); 4 ♀, 3 km S Darling, 3318AD, 28.ix.1979, Londt, well veget. hillside above wheatlands (NM BM); 1 ♂ 2 ♀, Stellenbosch [33°56'S:18°51'E], 16.ix.1964, Swart (NM); 1 ♂, Malmesbury [33°27'S:18°44'E], 19.ix.1964, Swart (NM); 1 ♀, Malmesbury, N. Cape Town, 6.x.1974, Pinhey (NMZ); 3 ♂ (holotype & paratypes) 1 ♀ (paratype), Du Toits Kloof, Paarl Dist [33°45'S:19°11'E], 27–28.ix.1959, B. & P. Stuckenberg, 2 000–3 500 ft (NM); 6 ♂ 4 ♀ (paratypes), Cold Bokkeveld, Ceres Dist. [33°02'S:19°22'E], 15–30.x.1934, M. Versveld (SAM); 2 ♀, Ceres Div., Matroosberg [33°23'S:19°39'E], xi.1917, Lightfoot, 3 500 ft (SAM); 1 ♀, Ceres [33°22'S:19°19'E], x.1940, Smithers (SAM); 12 ♂ 8 ♀ (paratypes), Michells Pass, Ceres Div. [33°24'S:19°17'E], x.1934, Mus. Staff (SAM); 1 ♀, 10 km N Tulbagh,

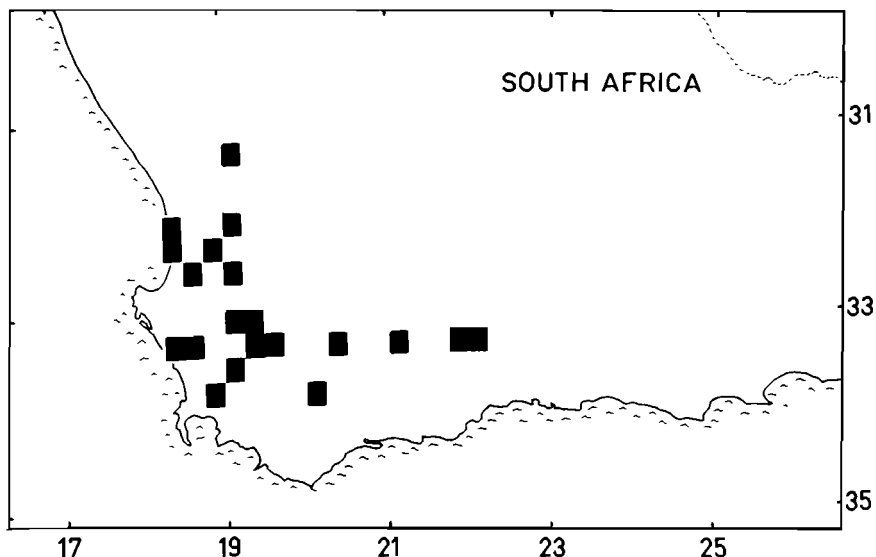


Fig. 83. *Damalis furcula* sp. n., distribution.

3319AA, 27.ix.1979, Londt, lower slopes on mts. hard soil woody veget. (NM); 1?, Montague [33°47'S:20°07'E], x.1919, Tucker (SAM); 1 ♂, Witte River [3320AD], xii.1933, Wood (SAM); 2 ♂ 1 ♀, Vleiland [33°22'S:21°11'E], 30.ix.1975, Whitehead (SAM); 2 ♀, Swartberg Pass, Gamka Rd, 3321BD, 10.xi.1986, Quickelberge & Londt, N slopes Rocky area (NM); 1 ♀, Swartebergen, Prince Albert Div. [33°13'S:22°03'E], ix.1934, Mus Staff (SAM). NM Type No. 7.

Distribution: Winter rainfall region of south-western Cape Province, South Africa (Table 1, Fig. 83).

Biological data: A species of the Cape macchia.

Relationship: Most closely related to *cylindrica* but also related to *heterocera* and *elongatus*.

Damalis heterocera (Wiedemann, 1821) **stat. rev.**

Figs 84–88, 197

Dioctria heterocera Wiedemann, 1821: 182.

Dasypogon anomalus Wiedemann, 1821: 232.

Damalis capensis Wiedemann, 1828: 416; Loew, 1858: 355; Loew, 1860: 182; Schiner, 1866: 681; Kertész, 1909: 94.

Damalis heterocera; Wiedemann, 1828: 416; Kertész, 1909: 94.

Lasiodamalis heterocerus; Hull, 1962: 60.

Lasiodamalis capensis; Hermann, 1926; Hull, 1962: 60.

Xenomyza heterocerus; Oldroyd, 1974: 129.

Xenomyza heterocera; Oldroyd, 1980: 372.

Redescription: Based on lectotype ♀ (South Africa, 'Capland').

Head: Dark red-brown; gold-silver pruinose. Antennal setae dark red-brown; scape with poorly developed protuberances; sockets widely separated (ie. space between antennae greater than space between eye margin and antenna). Eye:face width ratio=1.5. Face strongly gibbose; uniformly pruinose. Frons and vertex pruinose (ocellar tubercle weakly so). Mystax composed of many black bristles covering almost entire face. Palp yellow-brown; slightly swollen.

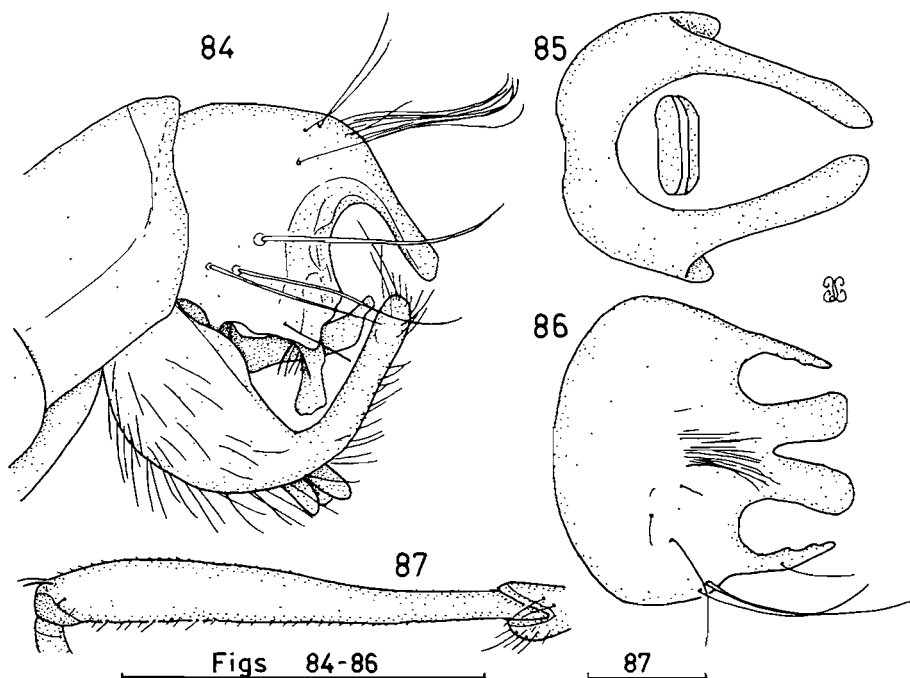
Thorax: Sct dark red-brown, posterior margin slightly paler; uniform yellow-gold pruinose. Pprm lb with distal apruinose spot, pal cal uniformly pruinose; major scutal setae poorly differentiated; 2 weak black npl. 5 black sctl s; sctl uniformly silver-gold pruinose. Length:height ratio of scutum=2.4. Posterior margins of metepimera extended slightly posteromedially (Fig. 4). Pleura dark brown and yellow-brown; strong gold pruinose except for shiny apruinose vertical strip on anepm. Wing 6.6×2.6 mm; microtrichia cover entire surface; venation (Fig. 197—Lions Head ♂); distal part of R₂₊₃ gently curved anteriorly; membrane brown-stained except for distal one-third. Halter pale brown-yellow. Legs brown-yellow, fem 3 partly dark red-brown anteriorly, all femora with tips dark red-brown anteriorly and posteriorly; mesothoracic leg lacking processes; fem 3=3.7 mm (Fig. 87).

Abdomen: Terga dark red-brown to black; largely shiny apruinose except for anterior and lateral margins which are fine gold pruinose; setae short dark red-brown medially, longer white laterally. Sterna brown-yellow; gold pruinose except for apruinose median areas; setae fine white.

Male: Similar to ♀ genitalia (Figs 84–86—Lions Head); epand upturned through a little more than 90°; hypd bilobed distally; cerci completely fused; hypcrct a little longer than cerci.

Variation: ♂ similar to ♀.

Material examined: SOUTH AFRICA: *Cape Province:* 2 ♀ (lectotype & paralectotype), Capland, Krebs S. (ZMB); 1 ♀ (holotype of *capensis*), Cape Good Hope, ix.1817 (ZMC); 1 ♀, Cape Colony, Wallace, ex coll W. W. Saunders (BM); 1 ♂ 1 ♀, O'Okiep [29°36'S:17°52'E], Cape Col. (SAM ZSM); 2 ♀, Ysterfontein [32°11'S:18°46'E], ix.1960, SAM (SAM); 2 ♀, Pakhuis Pass [32°08'S:19°00'E], Clanwilliam Dist., 17–19.x.1964, Stuckenberg, 950 m (NM); 2 ♂ 1 ♀, Pakhuis Pass, 3219AA, 15.ix.1972, Irwin, flat area seepages stream, 2 275 ft (NM); 2 ♀, Pakhuis Pass, Clanwilliam, ix.1936, Mus. Staff (SAM); 3 ♂, Cape Town [33°55'S:18°25'E], x.1937, Turner (BM); 1 ♀, Cape Town, 15.x.1920, Lightfoot (SAM); 1 ♂ 3 ♀, Kapstadt, 13.x.–7.xi.1958, Lindner (SMS); 2 ♂, Lion's Head [33°56'S:18°23'E], Cape Town, viii.1920, Turner (BM); 4 ♂ 7 ♀, Cape Town Lions Head, 3318CD, 29.ix.1979, Londt, E slopes above Signal Hill Rd. (NM); 1 ♀, Table Mountain [33°58'S:18°25'E], Cape Town, 11.xi.1911, Barnard, 800 ft (BM); 1 ♂, Sea Point, Cape Town 29.ix.1974, de Moor (NMZ); 2 ♀, nr 12 Apostles, Cape Town, 5.x.1974, de Moor (NMZ); 2 ♂ 3 ♀, Cape Town, Table Mt slopes above Cable house, 24.ix.1959, Stuckenberg (NM); 2 ♂ 2 ♀, Camps Bay (Cape Peninsula), [33°57'S:18°22'E], ix.1920, Turner (BM); 2 ♂ 3 ♀, Camps Bay (Cape



Figs 84–87. *Damalis heterocera* (Wiedemann). 84–86. ♂ genitalia. 84. Lateral. 85. Ventral. 86. Dorsal. 87. Right metathoracic femur, anterior aspect. 84–87 = ♂ (Cape Town, Lion's Head).

Peninsula), 15.x. 2.xi.1931, Munro (NM); 1 ♀ 2?, Camps Bay (Cape Peninsula [33°57'S:18°22'E], 15.x.1931, Munro (NM); 1 ♂ 2 ♀, Cape Town (Camp's Bay), 9.x.1948, Munro (NCI); 12 ♂ 19 ♀, Stellenbosch [33°56'S:18°51'E], 6 13.ix.1923 28.ix.1926 2.ix.1927 14 20 28.viii. 3 15.ix. 8 16 30.x.1928 27.viii.1929 16 26.ix. 3.x.1930 7.ix. 12.x.1934 26.ix. 1 2 14.x.1936 15.ix.1937 23.viii.1938 11.ix. 15.x.1942 2.v. 5.x.1944, Ac.US (NM); 1 ♂ 1 ♀, Stellenbosch, 25.ix.1925 (ZSM); 1 ♀, Stellenbosch, x.1948, Kriegler (NM); 6 ♂ 15 ♀ 1?, Stellenbosch, 1.ix.1923 12.xii.1924 25.xii.1925 20.ix.1926 10.x.1926, Brauns (NM); 1 ♂ 5 ♀, Stellenbosch, 1.ix.1923 4.x.1924 ix 11.x.1926, Brauns (SIW); 1 ♂ 1 ♀, Stellenbosch, 16 & 26.ix.1974, de Kock (NM); 1 ♂ 2 ♀, Stellenbosch, 19.ix.1973 2 8.ix.1974, le Roux (NM); 1 ♀, Stellenbosch, 12.x.1947, Vermeulen (NM); 1 ♂, Stellenbosch, x.1951, Theron (NM); 1 ♂, Stellenbosch, 18.ix.1947, Armstrong (NM); 1 ♂, Stellenbosch, ix.1947, Wagenaar (NM); 1 ♂, Stellenbosch, 6.ix.1923, Joubert (BM); 1 ♂, Stellenbosch, 13.ix.1923, le Roux (BM); 1 ♀, Jonkershoek [33°58'S:18°58'E], Stellenbosch, 2.x.1974, de Moor (NMZ); 1?, Stellenbosch (Jonkershoek Reserve), 7.x.1948, Munro (NCI); 10 ♂ 13 ♀, Banhoek Valley [33°55'S:18°55'E], Stellenbosch Div., x.1934, Mus. Staff (SAM); 1 ♂, Paarl [33°44'S:18°58'E], 8.ix.1917, Roberts (NM); 1 ♂, Paarl, 1.ix.1901, C. G. H. (NCI); 1 ♂, Postberg [33°06'S:18°00'E], 8.ix.1983, Freidberg (NM); 1 ♀, Ceres [33°22'S:19°18'E], 1-12.xi.1924, Turner (BM); 1 ♂ 1 ♀, Cold Bokkeveld, Ceres Dist., 15-30.x.1934, Versveld (SAM); 1 ♂, Assegaibos [33°53'S:19°05'E], La Motte, x.1940, van Son

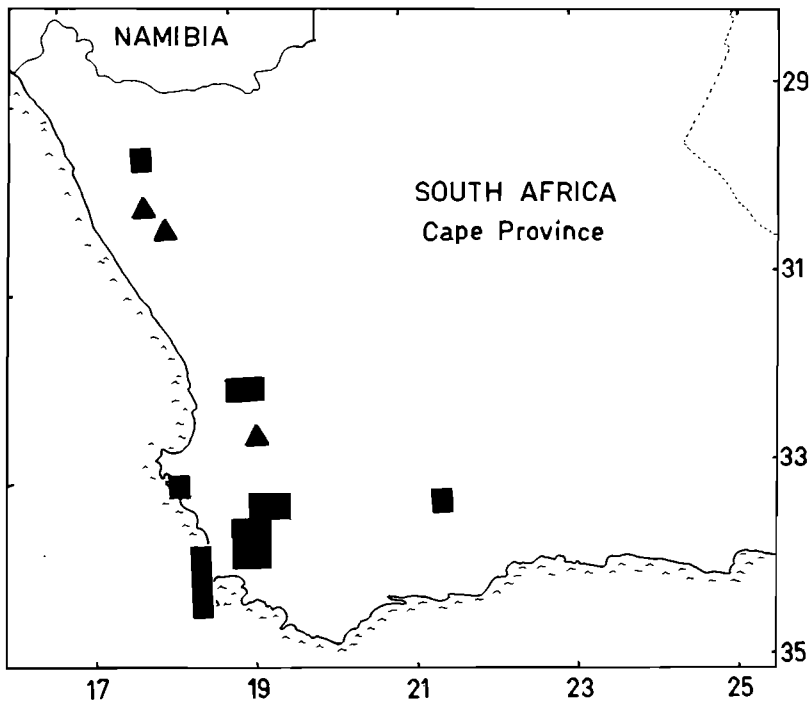


Fig. 88. *Damalis heterocera* (Wiedemann) (■) and *D. xaniomerus* sp. n. (▲) distribution.

(NM); 3 ♀, Franschhoek Pass [33°56'S:19°09'E], 7–8.x.1959, Stuckenberg (NM); 2 ♂ 6 ♀, 5 km E Wellington on Bainskloof Pass, 3319CA, 27.ix.1979, Londt, east slopes (NM); 1 ♂, Bainskloof, Wellington Dist. [33°37'S:19°06'E], 4–5.x.1959, Stuckenberg, c. 2 000 ft (NM); 2 ♀, Tulbagh [33°17'S:19°09'E], 3 4.x.1930 (NM); 1 ♀, Sneeuwgat valley, Winterhoek Mts [3319AA], Tulbagh, x.1933, Barnard, 4 000 ft (SAM); 11 ♂ 14 ♀, Sneeuwgat valley, Tulbagh Div., x.1934, Mus. Staff (SAM); 1 ♀, Gt Winterhoek Mts, Tulbagh, xi.1932, Barnard, 4 000 ft (SAM); 1 ♀, Ladismith [indistinct 33°29'S:21°16'E], Brauns (NM); 2 ♂ 2 ♀, Kommetjie Hillside, 3418AD, 12.ix.1981, Londt Schoeman & Stuckenberg, macchia vegetation (NM); 1 ♀, Constantia [34°01'S:18°27'E], ix.1885, L.P. (SAM); 2 ♀, Fish Hoek (Cape Peninsula) [34°08'S:18°26'E], x.1931, Munro (NM); 1 ♂ 1 ♀, Cape Point [34°21'S:18°29'E], Cape Town, 6–13 & 15–21.xi.1930, Saunders (BM); 2 ♀, Cape Peninsula, Cape Point Nature Reserve, 25.ix.1959, Stuckenberg (NM); 1 ♀, Bakoven [34°14'S:18°29'E], 17.x.1981, Theron (NM); 1 ♀, Caledon [34°14'S:19°25'E], x.1918, Peringuey (SAM).

Distribution: Winter rainfall area of south-western Cape Province, South Africa (Table 1, Fig. 88).

Biological data: A species of the Cape macchia.

Type-locality: The type-locality is here fixed as Cape Town, Lion's Head.

Relationship: Most closely related to *elongatus* but also related to *furcula* and *cylindrica*.

Damalas hirtiventris Macquart, 1846 **comb. n.**

Figs 89–95, 198

Damalis hirtiventris Macquart, 1846: 94; Loew, 1858: 354; Loew, 1860: 179; Kertész, 1909: 94.

Discocephala imbuta Walker, 1854: 498.

Damalis imbuta; Loew, 1858: 354.

Damalis imbutus; Kertész, 1909: 94.

Lophurodamalis hirtiventris; Hermann, 1926: 191; Hull, 1962: 61.

Lophurodamalis natalensis Curran, 1934: 8; Hull, 1962: 61 **syn. n.**

Lophurodamalis imbutus; Hull, 1962: 61.

Xenomyza hirtiventris; Oldroyd, 1974: 126; Oldroyd, 1980: 372.

Xenomyza imbuta; Oldroyd, 1980: 372.

Xenomyza natalensis; Oldroyd, 1980: 372.

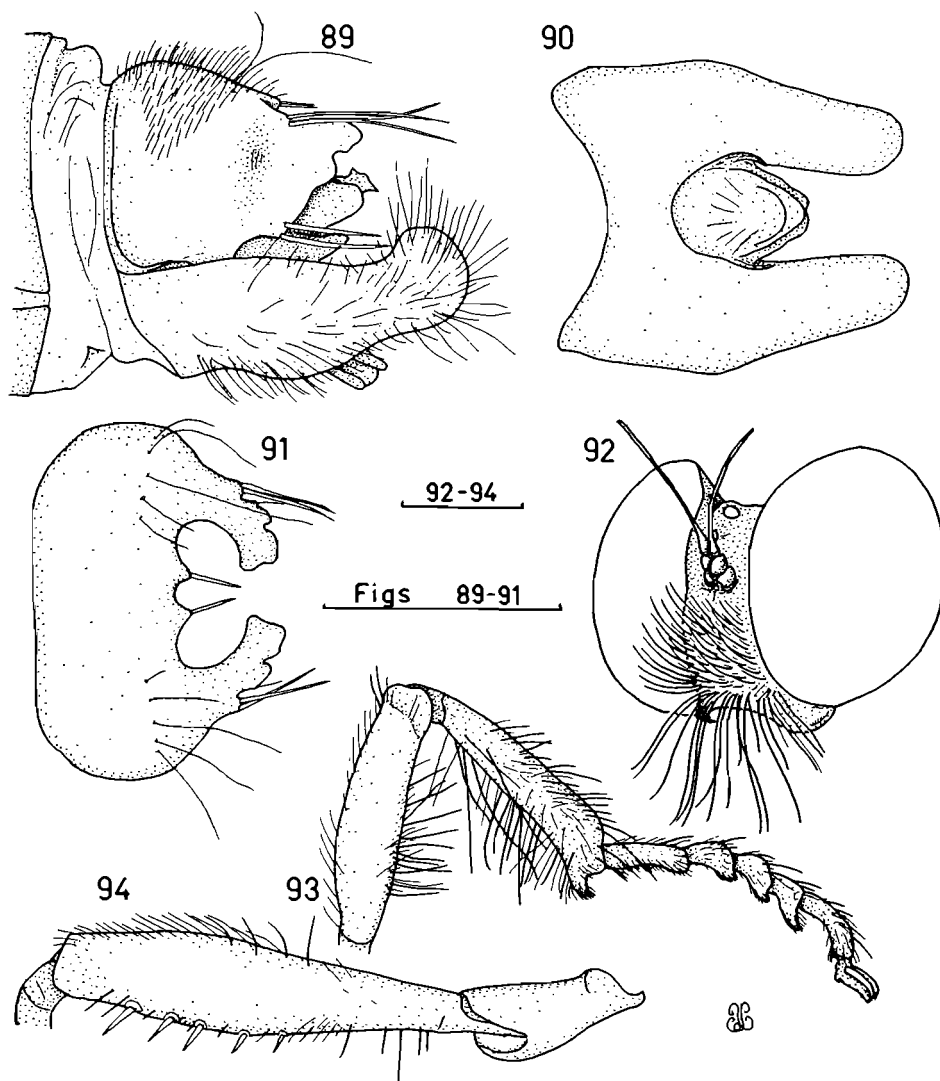
Redescription: Based on ♂ (South Africa, Caffraria) in NRS except where noted.

Head: Dark red-brown, gold-red pruinose. Antennal setae black; scape with moderately developed dorsal protuberance; sockets abutting. Eye:face width ratio = 1.8. Face rather flat, lower margin somewhat depressed; uniformly gold-red pruinose. Frons and vertex uniformly pruinose. Mystax composed of many dark red-brown bristles covering lower three-quarters of face; marginal bristles normal, upper ones directed upwards (Fig. 92). Palp dark brown; slender fusiform.

Thorax: Sct dark red-brown; gold-silver (laterally) and red-gold (medially) pruinose. Pprn lb uniformly pruinose; pal cal with distal shiny apruinose area; major scutal setae not clearly differentiated. ca 8 weakish long yellow sctl s, disc with long yellow setae; sctl pruinose except for hind margin. Length:height ratio of scutum = 1.6. Posterior margins of metepimera extended slightly posteromedially (Fig. 4). Pleura silver pruinose except for vertical strip on anepm which is shiny

apruinose. Wing $9,2 \times 3,7$ mm; microtrichia cover entire surface giving wing a dark appearance; venation (Fig. 198—Dukuduku ♀); R_{2+3} distally very gently curved anteriorly; membrane uniformly unstained. Halter dull yellow-brown. Legs dark red-brown, femora and tibiae orange-yellow proximally; mesothoracic leg with tib process and processes on tarsomeres 2–4 (Fig. 93); fem 3 = 3,9 mm (Fig. 94).

Abdomen: Terga yellow; no obvious pruinescence; setae yellow, as a thick pile medially, very long laterally. Sterna similar but all setae longish. Genitalia (Figs



Figs 89–94. *Damalis hirtiventris* Macquart. 89–91. ♂ genitalia. 89. Lateral. 90. Ventral. 91. Dorsal. 92. Head, anterolateral view. 93. Left mesothoracic leg. 94. Right metathoracic femur, anterior aspect. 88–91 = ♂ (Maritzburg); 92–94 = ♂ (7 mi E Mtubatuba).

89–91—Maritzburg ♂); epand lobes slightly bulbous distally; hypd with disto-medial pair of small seta-tipped projections; cerci apparently completely fused distally; hypcr of similar length as cerci.

Variation: ♂ similar to ♀ but lacks processes on mesothoracic leg.

Material examined: SOUTH AFRICA: 1 ♂ (holotype), [Caffraria (Wahlb.)], 108, 267, 232/88 (NRS); 1 ♂, no data [presumed Natal] (SAM); 1 ♂, Capland (ZSM). *Natal*: 1 ♂, Eshowe [28°53'S:31°28'E], xii.1916, Marley (NM); 1 ♀, 1.5 km E Mtunzini, Umlalazi Nature Res., 2831DD, xi.1978, Miller, indig. for. Malaise tr. (NM); 1 ♀, St Lucia [28°23'S:32°25'E], iii.1977, v. Tonder & Prinsloo (NCI); 5 ♀, Dukuduku [28°23'S: 32°19'E] between St Lucia & Matubatuba, 7–8.iv.1960, Stuckenberg (NM); 1 ♂, Dukuduku Bos, 2.iv.1945, J. C. F. (NM); 7 ♂ 14 ♀, 7 mi E Mtubatuba [28°25'S:32°11'E], 7.iv.1958, Ross & Leech, 75 m (CAS); 1 ♂, Maritzburg [Pietermaritzburg 29°37'S: 30°23'E], xii.1912, Fuller (NM); 1? (holotype—*natalensis*), Durban [29°51'S: 31°01'E], Natal, Africa, 4457 (AMNH); 3 ♀, Durban, i. xii.1915, Marley (NM); 1 ♂, Durban, ii.1915 [xi], Marley (BM); 3 ♂ 3 ♀, Durban, 22 28.xii.1906 19 21 27.v.1907, Leigh (NM); 1 ♂, Durban, Bluff, 20.xii.1919, Barker (NM); 1 ♂ 2 ♀, D'Urban, Ross (SAM); 1 ♂, Durban, i.1915, Marley (SAM); 1 ♂, Durban (SAM); 1 ♂, Durban, 20.x.1904, Leigh (ZSM); 1 ♂, Durban, 1903, Leigh (ZSM); 1 ♂, [no data—presumed as previous record] (ZSM); 1 ♀, Durban (ZSM); 1 ♂, Durban, 1900 (DM); 1 ♂, Durban, 15.i.1918, Barker, Ac No. 2184 (DM); 1 ♀ Durban, AB (BM); 1 ♂, Durban, Bell-Marley (BM); 1 ♂, Stella B., Durban, 3.i.1917, Barker (DM); 1 ♂, Durban, Umbilo, 22.iii.1913, Bevis (BM); 1 ♀, Umbilo [Durban], 12.x.1919, Bevis (SAM); 1?, Doonside [3030BB] S. Coast, 6.i.1917, Bevis; 1 ♂, Widenham [nr Umkomaas—30°12'S:30°4'E], S. Coast, 13.xii.1914, A. L. Bevis (DM). *Cape Province*: 1 ♀, Grahamstown [33°18'S: 26°32'E], Rhodes Campus, 14.iii.1974, Fayrer-Hosken (NM).

Distribution: Coastal areas of Natal, one record from eastern Cape Province, South Africa (Table 1, Fig. 95).

Biological data: Nothing known. The species probably behaves much like its close relative *speciosa* (q.v.).

Type-locality: The type-locality is here fixed as Durban.

Relationship: Most closely related to *speciosa* but also related more distantly to *simplex*.

Damalis hyalipennis Macquart, 1846 stat. rev.

Figs 96–100, 199

Damalis hyalipennis, Macquart, 1846: 95; Kertész, 1909: 94; Hull, 1962: 55.
Xenomyza hyalipennis; Oldroyd, 1974: 128; Oldroyd, 1980: 372.

Redescription: Based on Stella Bush ♂ in NM as unique holotype unavailable.

Head: Yellow-brown, silver-gold pruinose. Antennal setae dark red-brown; scape without ventral and dorsal protuberances; sockets abutting. Eye:face width ratio=2.0. Face flat, lower facial margin depressed; pruinose except for lower facial margin. Frons and vertex uniformly pruinose. Mystax composed of 8 bristles

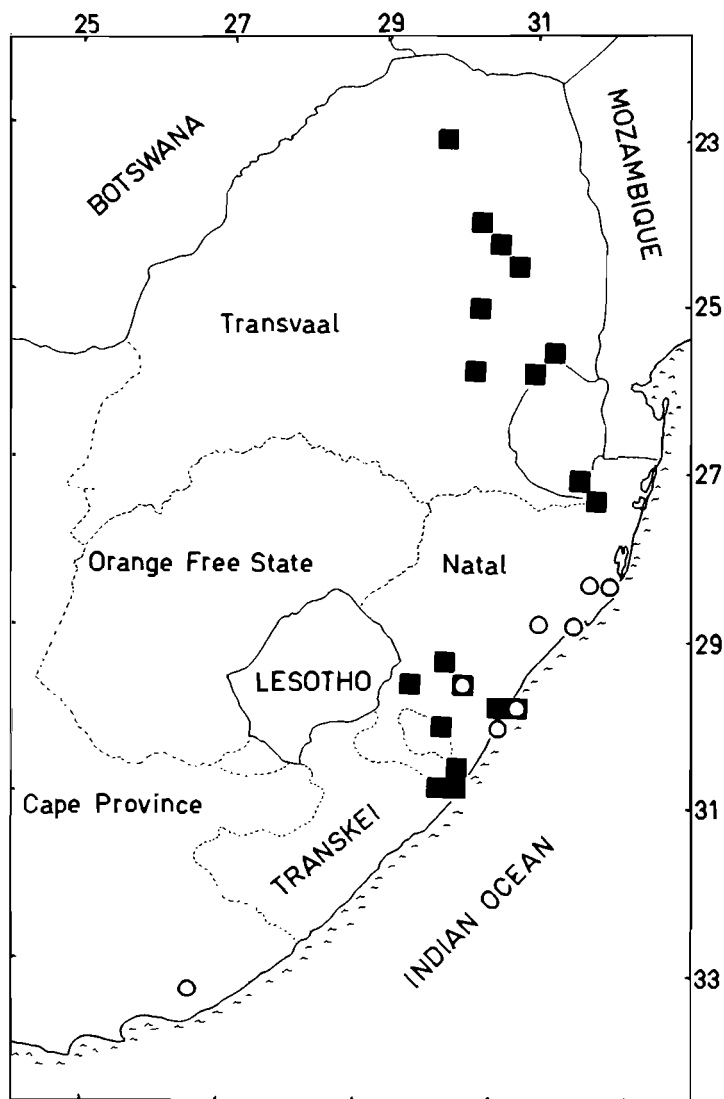


Fig. 95 *Damalis hirtiventris* Macquart (○) and *D. speciosa* Loew (■) distribution.

on lower facial margin (6 black, outer pair pale yellow-brown). Palp brown; slender fusiform.

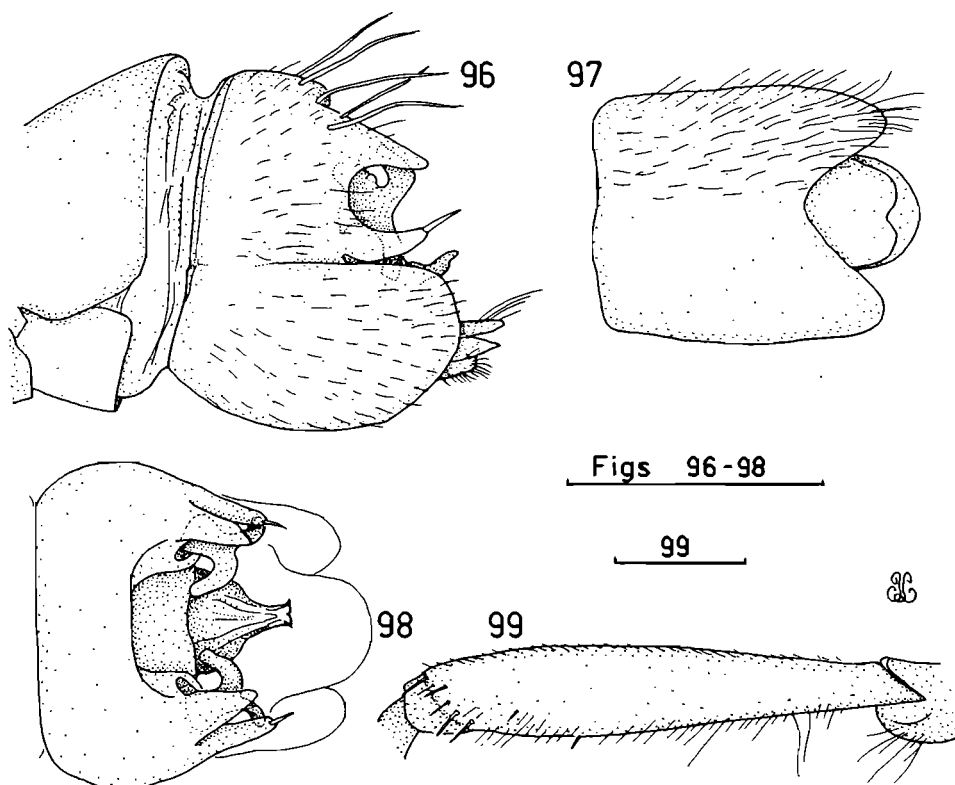
Thorax: Sct brown; uniform silver-gold and red-gold pruinose. Pprn lb with shiny apruinose area posteriorly; pal cal pruinose; major scutal setae yellow, not clearly differentiated. 8 pale yellow upwardly directed scutl s; scutl pruinose except for hind margin. Length: height ratio of scutum = 2,2. Postmetacoxal area entirely membranous. Pleura uniform fine gold-silver pruinose. Wing $7,7 \times 2,7$ mm; microtrichia completely absent; venation (Fig. 199—Stella Bush ♂); distal part of R_{2+3} very

gently curved anteriorly; membrane uniformly unstained. Halter yellow-brown. Legs yellow-brown, anterior and posterior tips of femora dark red-brown; meso-thoracic leg lacking processes; fem 3 = 3,7 mm (Fig. 99).

Abdomen: Terga yellow-brown; fine gold pruinose except for apruinose medio-distal area; setae short dark red-brown medially, pale yellow laterally. Sterna similar but uniformly pruinose and with yellow setae only. Genitalia (Figs 96–98 Durban ♂); epand completely fused with hypd anteriorly, lobes poorly differentiated; cerci not fused distally; hypcrct extending beyond cerci.

Variation: ♂ similar to ♀.

Material examined: MOZAMBIQUE: 1 ♀, Polana Beach, Lourenco Marques [= Maputo 25°58'S: 32°36'E], i.1956, Stuckenberg (NM). SOUTH AFRICA: *Natal:* 1 ♀, Dukuduku [28°23'S:32°19'E] between St Lucia & Matubatuba, 7–8.iv.1960, Stuckenberg (NM); 1 ♀, St Lucia Lake [28°00'S: 32°30'E], Easter 1934, Bell-Marley (NM); 2 ♀, Salt Rock Bch, Umhlali, 8.iv.1958, Ross & Leech, Om (CAS); 1 ♂ 1 ♀, Malvern [29°53'S:30°55'E], ii & iii.1897, Marshall (BM); 3 ♂ 1 ♀, Stella B [Durban 29°51'S:31°01'E], ii & iv.1915, Marley (NM SAM); 1 ♂, Stella Bush, 29.i.1916, Janse (NCI); 1 ♂ 2 ♀, Durban, xii.1907 7.v.1908, Leigh (NM); 1 ♂ 1 ♀,



Figs 96–99. *Damalis hyalipennis* Macquart. 96–98. ♂ genitalia. 96. Lateral. 97. Ventral. 98. Dorsal. 99. Right metathoracic femur, anterior aspect. 96–98 = ♂ (Durban); 99 = ♂ (Stella Bush).

Durban, 6.ii.1910, Leigh (SIW); 1 ♀, Durban, 1916, Akerman (NM); 1 ♂ 2 ♀, Umbilo, Durban, 30.iii.1913 5.iv.1915 5.iv.1920, Bevis (DM); 2 ♂ 2 ♀, Umbilo [Durban], 6.iv.1913 22 & 23.iii.1914, Bevis (DM); 1 ♀, Umbilo, 6.iv.1913 (DM); 1 ♀, Umhlanga Rocks [29°43'S:31°05'E], 9.v.1957, Schofield (NM); 1 ♂, Winklespruit [30°06'S:30°51'E], 28.xii.1918, Barker, Ac No. 2328 (DM); 1 ♀, Scottburgh [30°17'S:30°45'E], 15.xi.1963, Stuckenberg (NM).

Distribution: Coastal areas from southern Mozambique to southern Natal, South Africa (Table 1, Fig. 100).

Biological data: Nothing known.

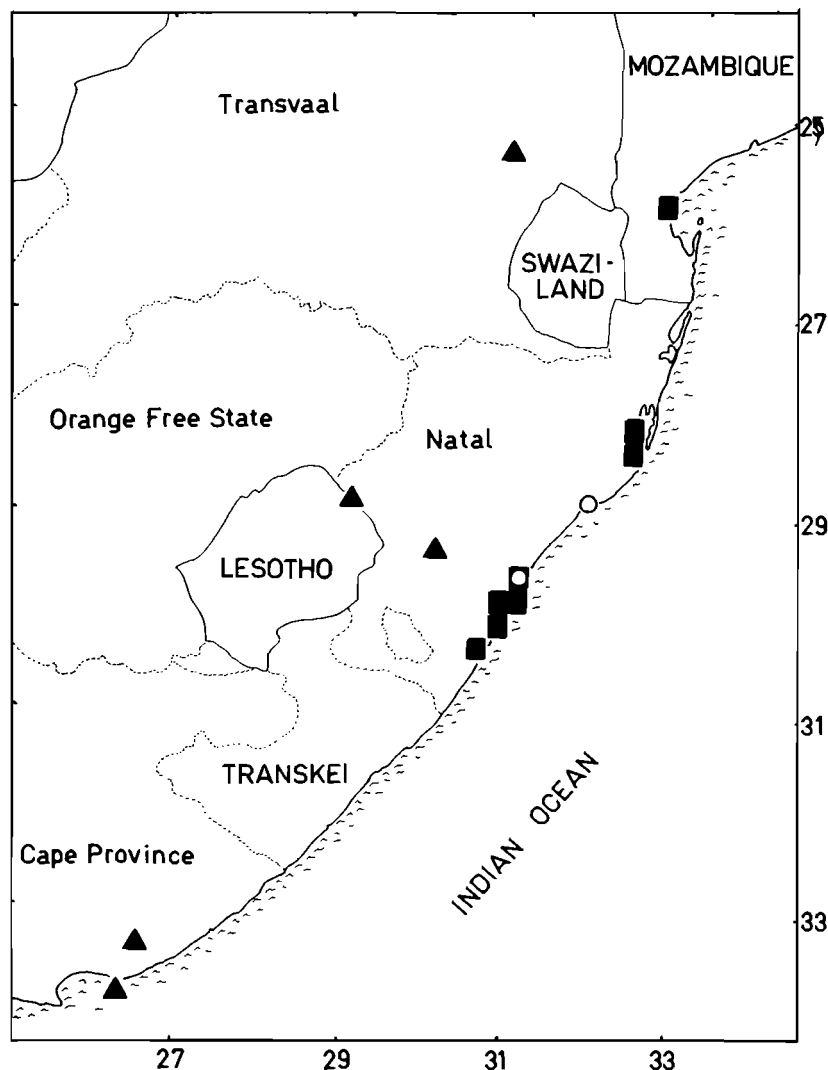


Fig. 100. Distribution of *Damalis hyalipennis* Macquart (■), *D. longipennis* Loew (▲) and *D. achilles* sp. n. (○).

Type-locality: Macquart gives only 'De la Cafrerie, Recu de M. Delagorgue'. I here fix the type-locality as Durban.

Relationship: Most closely related to *achilles* but also related to *complecta*, *drilus* and *pollinosa*.

***Damalis knysna* sp. n.**

Figs 101–105, 200

Etymology: Named after the type-locality of Knysna.

Description: Based on holotype ♂ (South Africa, Knysna).

Head: Dark red-brown and brown; silver and red-gold pruinose. Antennal setae black; scape with moderately well-developed ventral and dorsal protuberances; sockets abutting. Eye: face width ratio = 1.9. Face yellow-brown, gently gibbose centrally; silver pruinose except for two small apruinose central spots. Frons and vertex dark red-brown, uniformly fine red-gold pruinose. Mystax composed of many black bristles covering *ca* two-thirds of face. Palp brown-orange; fairly short and very slightly bulbous.

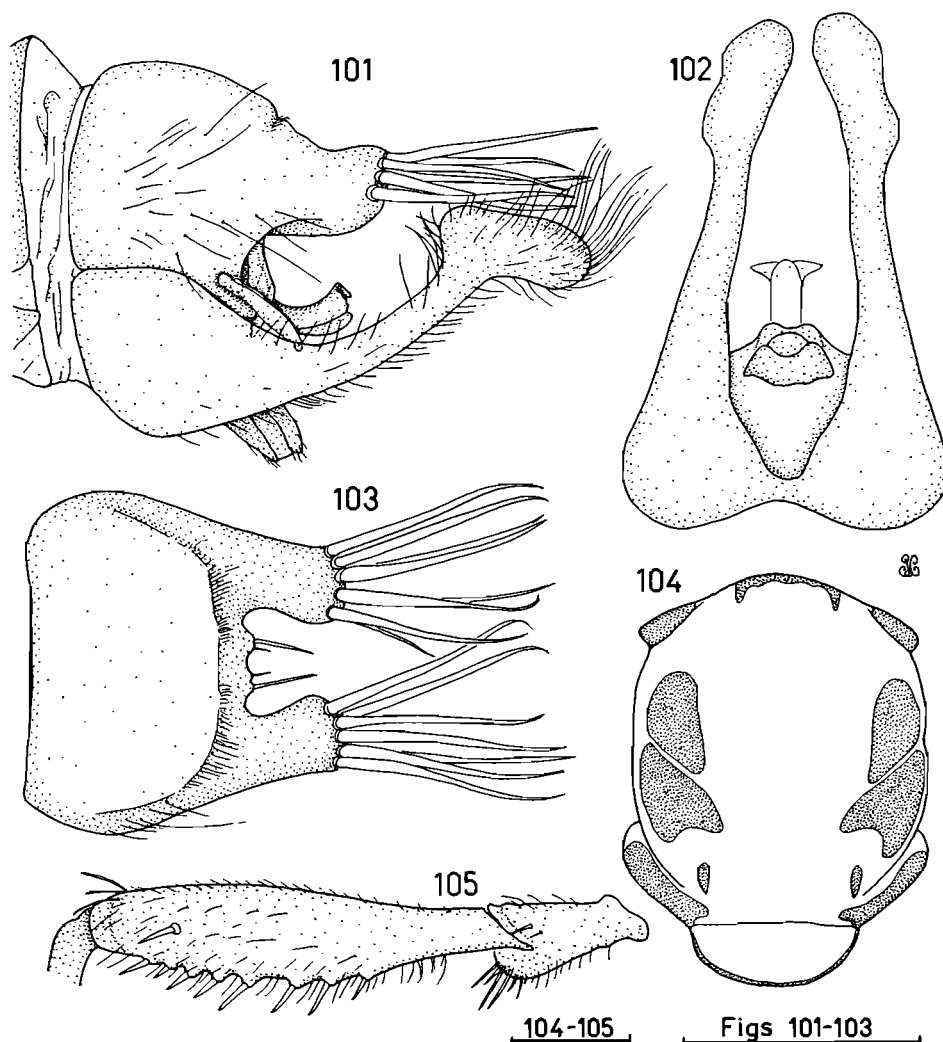
Thorax: Sct brown; silver pruinose except for shiny apruinose areas (Fig. 104). Pprn lb and pal cal largely apruinose; major scutal setae not well differentiated. 2 weak black sctl s; sctl fine silver-gold pruinose except for hind margin. Length: height ratio of scutum = 1.7. Posterior margins of metepimera extended posteromedially but do not touch (Fig. 6). Pleura silver pruinose except for posterodorsal part of anepst. Wing 7.9×2.6 mm; microtrichia absent from alula, a_1 , cup and membrane adjacent to entire hind margin; venation (Fig. 200—Storms River ♀); distal part of R_{2+3} gently curved anteriorly; membrane unstained. Halter brown-yellow. Legs anteriorly brown, posteriorly yellow-brown, tips of femora dark red-brown anteriorly and posteriorly; mesothoracic leg lacking obvious processes; fem 3 = 3.5 mm (Fig. 105).

Abdomen: Terga red-brown, entirely shiny apruinose except for very small lateral patches of silver pruinescence on distal segments; setae largely absent, few black ones posteriorly only. Sterna similar but silver pruinose except for small medial areas; setae pale yellow-white. Genitalia (Figs 101–103); epand lobe elongate, with enlarged distal knob, lobes connected by narrow bridge only; hypd with prominent distally directed seta-bearing projections, proximally cuticle is very thin and almost membranous; cerci not fused distally; hyprect approximately as long as cerci.

Variation: ♂ similar to ♀ but sct with small additional triangular apruinose lateral spot posterior to those found in ♂. In addition ♀ has generally darker abdomen. Montagu Pass ♂ somewhat paler in colour with yellow-brown abdomen (thought to be a little teneral).

Material examined: All specimens paratypes except for holotype. SOUTH AFRICA: *Cape Province*: 1 ♂ 1 ♀, Montagu Pass [$33^{\circ}47'S$; $20^{\circ}07'E$], ii.1909, Dr Brauns (NM); 1 ♂ (holotype) 1 ♀, Knysna Forest, 3423AA, 9.xii.1979, Londt & Stuckenberg, Diepwalle Deep forest & margins (NM); 1 ♀, Storms River Pass, Tsitsikama area, 3423BB, 8.xii.1967, B. & P. Stuckenberg (NM). NM Type No. 8.

Distribution: Southern and eastern Cape Province, South Africa (Table 1).



Figs 101–105. *Damalis knysna* sp. n. 101–103. ♂ genitalia. 101. Lateral. 102. Ventral. 103. Dorsal. 104. Pruinescence pattern of scutum. 105. Right metathoracic femur, anterior aspect. 101–103, 105 = ♂ holotype (Knysna); 104 = ♀ paratype (Storms River Pass).

Biological data: A forest-inhabiting species.

Relationship: Closely related to both *longipennis* and *chelomakolon*.

Damalis longipennis Loew, 1858 **stat. rev.**

Figs 100, 106–109, 201

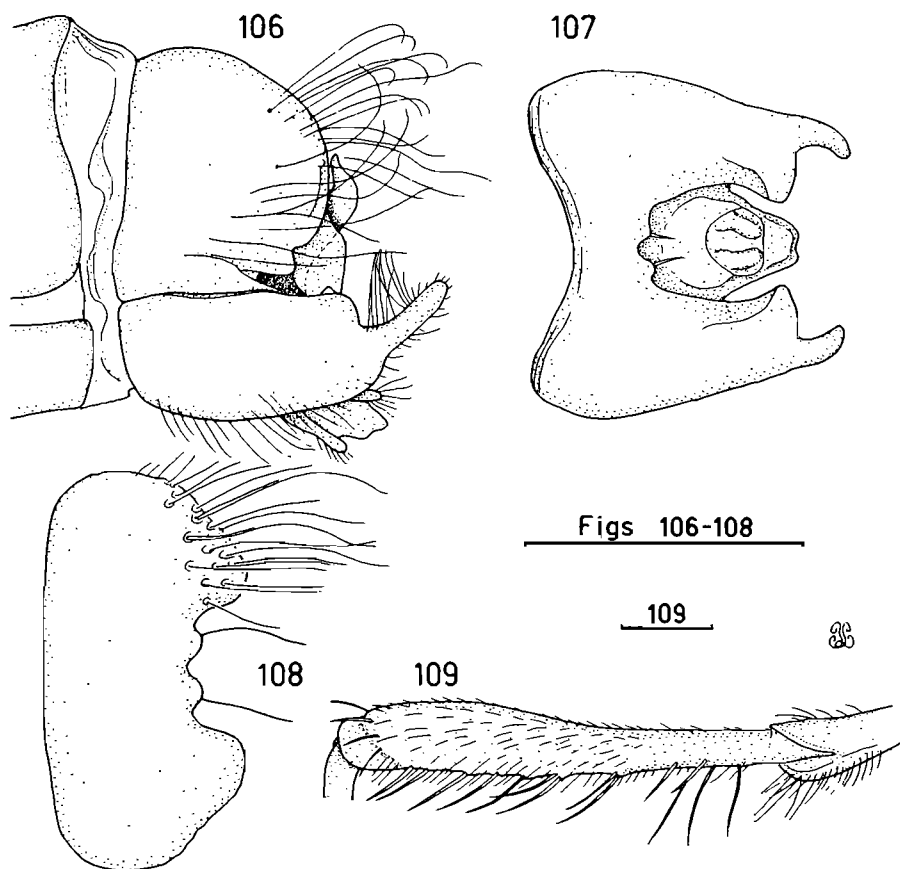
Damalis longipennis, Loew, 1858: 354; Loew, 1960: 181; Kertész, 1909: 94; Hull, 1962: 55.

Xenomyza longipennis; Oldroyd, 1980: 372.

Redescription: Based on holotype ♂ (South Africa, Kaffraria) unless otherwise stated.

Head: Dark red-brown; gold-red pruinose. Antennal setae black; scape with moderately well-developed ventral and dorsal protuberances; sockets abutting. Eye: face width ratio = 1,9. Face very slightly gibbose in lower half; uniformly pruinose. Frons and vertex uniformly pruinose. Mystax composed of many dark red-brown bristles covering *ca* three-quarters of face. Palp dark red-brown; slender fusiform.

Thorax: Sct dark red-brown; uniformly gold-silver and gold-red pruinose. Pprn lb and pal cal largely shiny apruinose; major scutal setae not well differentiated. 6 black sctl s; sctl pruinose except for hind margin. Length:height ratio of scutum = 1,9. Posterior margins of metepimera extended slightly posteromedially (Fig. 4). Pleura pruinose except for posterodorsal part of anepst and small area of anepm. Wing $8,7 \times 2,8$ mm; microtrichia cover whole membrane except for alula and anterior part of a_1 and basal part of cup; venation (Fig. 201—Balgowan ♀); distal part of R_{2+3} very gently curved anteriorly; membrane unstained. Halter brown-yellow. Fore and mid legs anteriorly dark red-brown, posteriorly yellow-



Figs 106–109. *Damalis longipennis* Loew. 106–108. ♂ genitalia. 106. Lateral. 107. Ventral. 108. Dorsal. 109. Right metathoracic femur, anterior aspect. 106–109 = ♂ (Balgowan).

brown, hind legs dark red-brown except for fem and tib which are basally brown-yellow; mesothoracic leg with small tibial process only; fem 3=4,0 mm (Fig. 109).

Abdomen: Terga dark red-brown to black, entirely shiny apruinose except for small patches on T1; setae short, shiny, black except for lateral longer pale white ones. Sterna similar but silver pruinose strips laterally; setae longish pale white. Genitalia (Figs 106–108); epand lobes shortish, with finger-like distal projection; cerci not fused distally; hypocr a little shorter than cerci.

Variation: ♂ similar to ♀—including possession of tibial process on mid leg.

Material examined: SOUTH AFRICA: 1 ♂ (holotype), [Caffraria (Wahlb.)], 3, 110, 269, 234/88 (NRS). *Transvaal*: 1 ♀, Sabie, Caravan Park, 2530BD, 27.ii.1980, Londt & Schoeman, forest margins (NM). *Natal*: 1 ♀, Cathedral Peak area, Indumeni Forest, 2829CC, 5–6.ii.1983, Londt (NM); 1 ♂ 2 ♀, Balgowan [2930AC], 21.iii.1980, Londt (NM); 1 ♂ 2 ♀, Karkloof [2930AC], ii.1897, Marshall, 1903–17 (BM). *Cape Province*: 1 ♀, Grahamstown, Dassie Krantz [3326BC], 22.iii.1973, Londt (NM); 1 ♂, Alexandria Forest [3326CD], 28.ii.1965, Watsham & Lewis (AM).

Distribution: Forest areas from eastern Transvaal, through Natal, into eastern Cape Province, South Africa (Table 1, Fig. 100). Literature records for Zimbabwe refer to *chelomakolon* sp. n.

Biological data: A forest-inhabiting species.

Type-locality: I here fix the type-locality as Balgowan, Natal.

Relationship: Closely related to *knysna* and *chelomakolon*.

***Damalis monochaetes* sp. n.**

Figs 1, 61, 110–117, 202

Etymology: Gr. *monos*—one; *chaite*—hair. Refers to the single seta mounted on a distal process of the hypandrium.

Description: Based on holotype ♂ (South Africa, Doreen Clarke Nature Reserve) unless otherwise indicated.

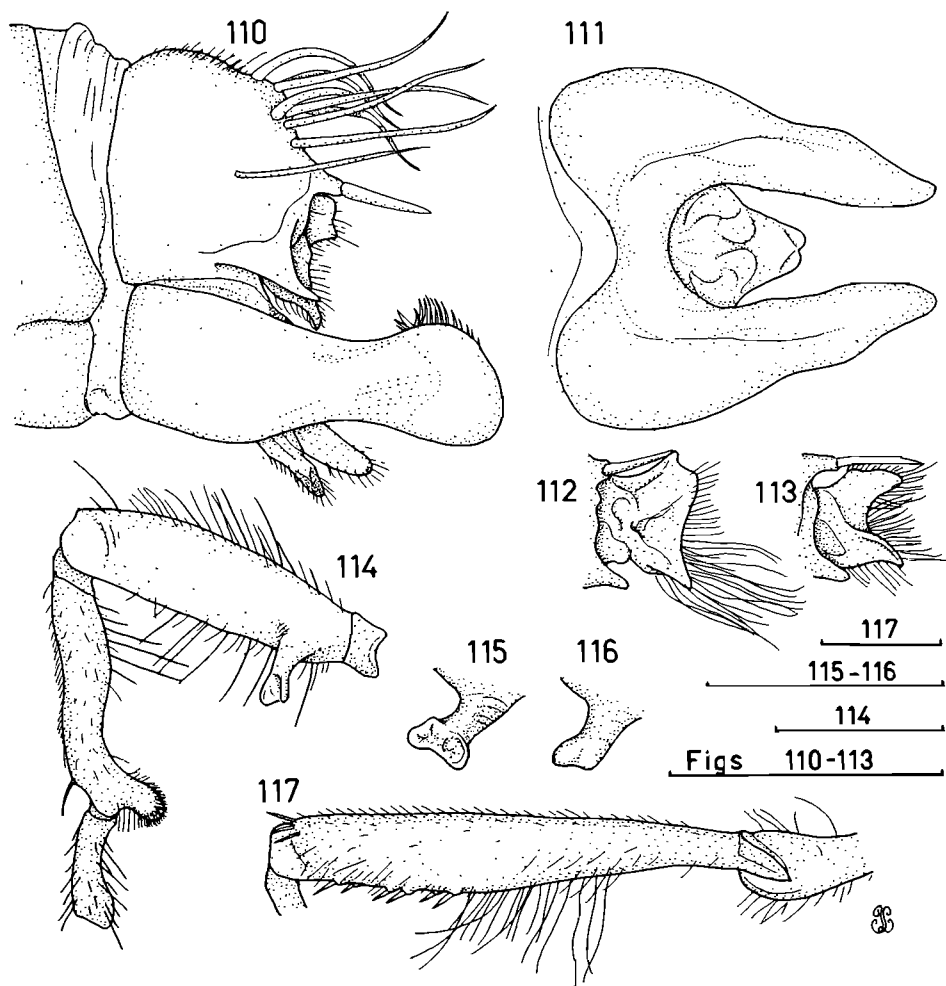
Head: Black, gold pruinose. Antennal setae black (few yellow); scape with moderately well-developed ventral and dorsal protuberances; sockets abutting. Eye: face width ratio = 2,0. Lower part of face slightly gibbose and ca two-thirds shiny apruinose. Frons and vertex uniformly pruinose. Mystax composed of many black bristles on lower two-thirds of face. Palp dark red-brown; slender fusiform.

Thorax: Sct black; uniform gold pruinose. Pprn lb and pal cal uniformly pruinose; major scutal setae not clearly differentiated. 6 black sctl s; sctl pruinose including hind margin. Length: height ratio of scutum = 1,9. Posterior margins of metepimera extended slightly posteromedially (Fig. 4). Pleura gold pruinose except for upper hind corner of anepst. Wing 8,8×3,1 mm; microtrichia cover entire surface; venation (Fig. 202—Mkomanzi ♂) yellowish anteriorly; R₂₊₃ straight; membrane uniformly unstained. Halter yellow. Legs black, tib 1 & 2 yellow-brown dorsoproximally, fem 3 tib 3 and proximal tarsomeres yellow-brown dorso-proximally,

mesothoracic leg with cx fem and tib processes (Figs 114–115) fem process with dish-like apex; fem 3=4,1 mm (Fig. 117).

Abdomen: Terga black; gold pruinose except for posterodorsal parts; setae yellow, longish laterally. Sterna similar but with small apruinose spots centrally (T2–3). Genitalia (Figs 110–112—Balgowan ♂); epand lobes joined by fairly narrow bridge; goncx leaf-like with small dorsal process; cerci not completely fused distally; hyprct *ca* same length as cerci.

Variation: ♂ similar to ♀. Lilani ♂ genitalia (Fig. 113) and fem process (Fig. 116) somewhat different but presently considered conspecific.



Figs 110–117. *Damalis monochaetes* sp. n. 110–113. ♂ genitalia. 110. Lateral. 111. Ventral. 112–113. Gonocoxite. 114. Right mesothoracic leg. 115–116. Mesothoracic tibial process. 117. Right metathoracic femur, anterior aspect. 110–112, 114–115 = ♂ (Balgowan); 113, 116 = ♂ (Lilani); 117 = ♂ holotype (Doreen Clarke Nat Res).

Material examined: SOUTH AFRICA: *Natal*: 2 ♀, Bulwer [2929DD], 1914, Haygarth (BM); 1 ♀, Nhluzane [2929DB], ca 36 km W Pietermaritzburg, 26.iii.1980, Londt, rocky mountainside & grass (NM); 5 ♂ 5 ♀, Mkomanzi Riv. Valley ca 15 km SW Boston [2930CA], 2.iv.1986, Londt, grass—edge forest patch (NM); 3 ♂ 7 ♀, Karkloof, 30 km NE Howick [2930AC], 17.iv.1986, Londt, grassy forest margin (NM); 5 ♀, Karkloof range nr Mt Alida, Geekies Farm, 14.iii.1962, Stuckenberg, 1 500 m (NM); 1 ♂ Karkloof, ii.1897, Marshall (BM); 1 ♀, Karkloof, 24.iii.1980, Londt (NM); 1 ♀, 15 km N of Howick [2930AC], 1.iii.1981, Liggitt (NM); 1 ♀, Cedara [29°32'S: 30°17'E], Swartkop, 24.iii.1949, Munro (NCI); 7 ♂ 13 ♀, Balgowan [2930AC], 21.iii.1980, Londt (NM); 2 ♂, 10 km S Dargle [2930CA], 26.iii.1980, Londt (NM); 1 ♀, Dargle, 20.ii.1987, Reavell, grassveld, 4 400 ft (NM); 6 ♂ 4 ♀ (paratypes), Doreen Clarke Nat. Res., 29°34'40"S: 30°17'20"E, 7.iii.1988, J. G. H. Londt, 1 100 m, mistbelt mixed forest (NM); 4 ♂ (holotype & paratypes) 5 ♀ (paratypes), Pietermaritzburg, Doreen Clarke Nat. Res., 26.iii.1986, J. Londt (NM); 1 ♂ (paratype), Pietermaritzburg, Doreen Clarke Nat. Res., 2930CB, 20.iii.1986, J. Londt (NM); 1 ♂ (paratype), Pietermaritzburg, Doreen Clarke Nat. Res., 2930CB, 20.iii.1986, J. Londt (NM); 1 ♂ 1 ♀ (paratypes), Pietermaritzburg, Doreen Clarke Nat. Res., 16.iii.1987, M. Arbuckle (NM); 1 ♀, Pietermaritzburg, 4.9.1978 [? 9.iv.1978], Coogan, found in field 2.30pm (NM); 10 ♂ 6 ♀, 10 km SE Ahrens on Lilani Rd., 2930BD, 8.iv.1986, Londt, grassveld & forest margins (NM); 2 ♂, near Lilani, Ahrens district, iv.1962, Stuckenberg (NM); 2 ♂ 2 ♀, Umtamvuna Nature Res., 3030CC, 25–27.iii.1985, Londt, open grass forest margin (NM); 3 ♂ 1 ♀, Vernon Crookes Nat. Res., Umzinto, 30°17'S: 30°37'E, 25–26.iii.1985, Mansell, 443 m, (NCI). TRANSKEI: 1 ♀, Magna Falls [? Magwa 3129BC], 14.iv.1979, Grout, grassy hillside (NM). NM Type No. 9.

Distribution: South Africa (Natal) and Transkei (Table 1, Fig. 61).

Biological data: This species is found in long grass bordering forest patches. I have assembled 18 prey records belonging to 5 insect orders and the Araneida as follows: 1 *Areneida*—Heteropodidae (1); 5 *Coleoptera*—Staphylinidae (4), ? (1); 2 *Diptera*—Ceratopogonidae (1), Sphaeroceridae (1); 1 *Hemiptera*—Cicadellidae (1); 8 *Hymenoptera*—Formicidae (7), ? (1); 1 *Thysanoptera*—Phlaeothripidae (1).

Relationship: Most closely related to *femoralis* but also related to *turneri* and *doryphorus*.

***Damalis neavei* sp. n.**

Figs 118–123, 203–204

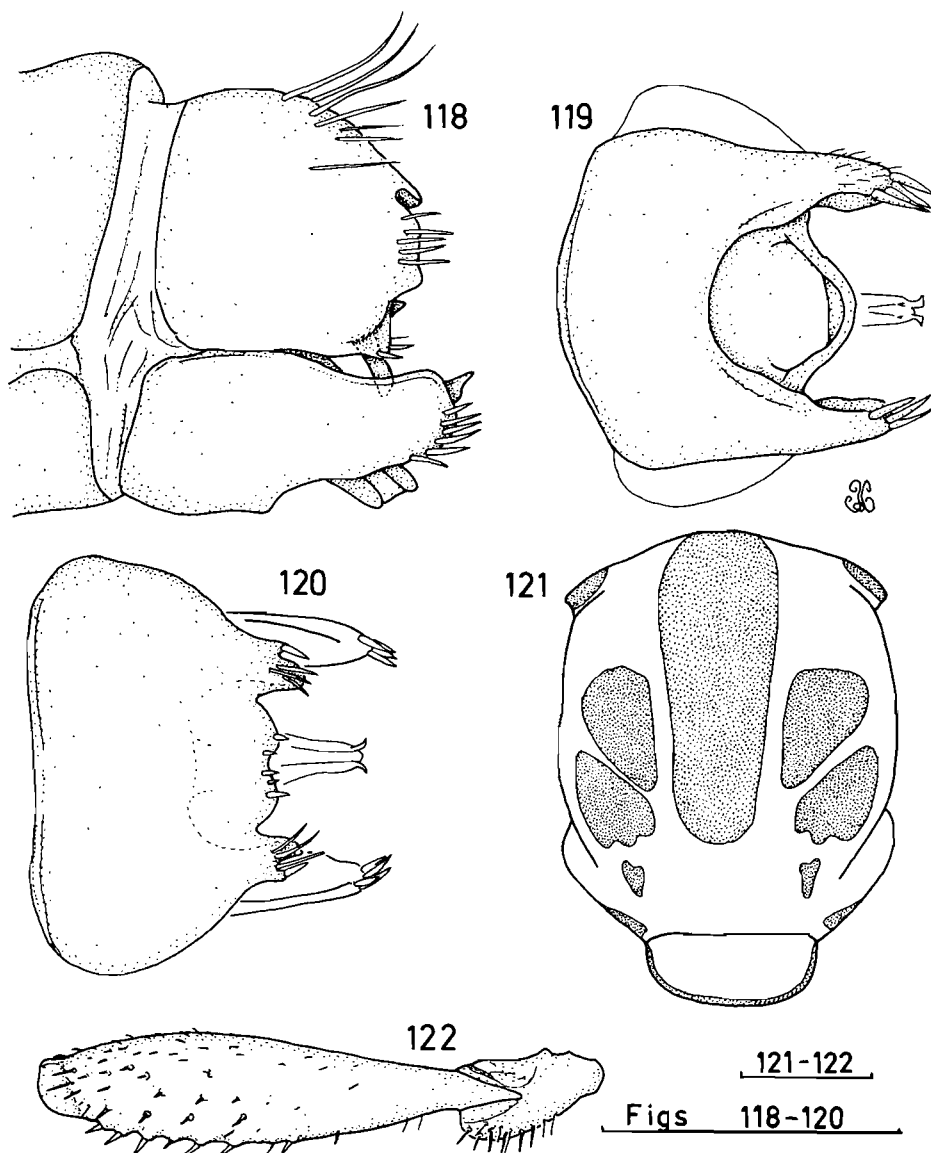
Etymology: Named in honour of S. A. Neave whose pioneering collecting in Malaŵi provided many interesting specimens.

Description: Based on holotype ♂ (Malaŵi, Mlanje).

Head: Dard red-brown to black, silver-gold pruinose except for some shiny apruinose areas as noted. Antennal setae short dark red-brown; scape lacking protuberances; sockets abutting. Eye: face width ratio = 1.9. Face flat, lower facial margin depressed; uniformly pruinose except for lower facial margin. Frons and

vertex pruinose (apparent apruinose strip between eyes at level of antennal bases). Mystax composed of 6 yellowish bristles and a few whitish setae confined to lower facial margin. Palp brown; slender fusiform.

Thorax: Sct dark red-brown to black centrally, yellow-brown laterally; silver-gold pruinose except for apruinose pattern (Fig. 121). Pprn lb with shiny apruinose spot; pal cal with shiny apruinose spot; major scutal setae small, not clearly differenti-



Figs 118-122. *Damalis neavei* sp. n. 118-120. ♂ genitalia. 118. Lateral. 119. Ventral. 120. Dorsal. 121. Pruinescence pattern of scutum. 122. Right metathoracic femur, anterior aspect. 118-121 = ♂ paratype (Rua Valley); 122 = ♂ paratype (SW Lake Chilwa).

ated. Sct1 s minute (considered absent); sct1 uniformly pruinose. Length:height ratio of scutum = 1.9. Postmetacoxal bridge complete. Pleura except for parts of anepst and anepm silver-gold pruinose. Wing 6.6×2.8 mm; microtrichia present except on alula and posterior half of a_1 ; venation (Fig. 203 — Blantyre ♂ paratype); distal part of R_{2+3} gently curved anteriorly; membrane slightly yellow-stained at about midlength. Halter brown, legs brown-yellow, all femora with tips dark red-brown anteriorly and posteriorly; mesothoracic leg lacking processes; fem 3 = 2.9 mm (Fig. 122).

Abdomen: Terga brown-yellow (T1 brown); uniformly fine gold pruinose; setae tiny yellow. Sterna similar but anteriorly somewhat apruinose. Genitalia (Figs 118–120 — Ruvo Valley paratype ♂); cerci completely fused and distally truncate; hypocr completely extended beyond cerci and with rounded tip.

Variation: ♂ similar to ♀ except for obvious differences in wing coloration (Fig. 204).

Material examined: All specimens are paratypes except for holotype. MALAWI: 1 ♂, [no locality — presumed Malaŵi], 27.iii.1913, S. A. Neave [Prey: Hemiptera, ? Fam. 'Decranotropes Det. W. E. China'] (BM); 4 ♀, 12 km S of Mponela, SE1333DA, 26.ii. 7.iii.1987, J & A Londt, trees & grass in poorly drained area (NM); 1 ♀, 8 mi E Ft Manning [13°48'S:32°54'E], 1.iii.1958, E. S. Ross & R. E. Leech, 1 120 m (CAS); 1 ♂, Mlanje [15°57'S: 35°36'E], 13.i.1913, S. A. Neave [Prey: Lepidoptera, ? Fam. 'Laspeyresia sp. ?'] (BM); 1 ♀, Mlanje, 14.xii.1912, S. A. Neave (BM); 1 ♀, Mlanje, 1.i.1913, S. A. Neave (BM); 1 ♂ (holotype), Mlanje, 31.i.1913, S. A. Neave [Prey: Hemiptera, Membracidae 'Centrotus sp. Det. W. E. China'] (BM); 1 ♂ 1 ♀, Ft. Mangoche to Chikala Boma [14°27'S: 35°29'E], 20–25.iii.1910, S. A. Neave, 4 000 ft (BM); 1 ♀, Marimba [? Maremba 14°14'S: 34°49'E], 15.i.1910, J. B. Davey (BM); 1 ♀ Mlanje, 11.ii.1914, S. A. Neave [Prey: Coleoptera, ? Fam. 'Polycorynus sp. Det. G.E. Bryant'] (BM); 1 ♀, Mlanje, 26.xii.1944, R. C. Wood, 2 000 ft (BM); 1 ♂, Mlanje, ix.1913–ii.1914, J. B. Davey (BM); 1 ♂, Rua V [Rua Basin — 15°54'S:35°30'E], 3.iii.1913, S. A. Neave (BM); 2 ♂, S.W. of Lake Chilwa [15°30'S:35°30'E], 9.i.1914, S. A. Neave [Prey: Coleoptera, Chrysomelidae 'Melitonoma punctipennis Jae.' & Hymenoptera, Formicidae, 'Myrmecaria'] (BM); 1 ♀ S.W. of Lake Chilwa, 10.i.1914, S. A. Neave [Prey: Hymenoptera, Formicidae, 'Myrmecaria eumenoides Gergh. ♂'] (BM); 2 ♀, S.W. of Lake Chilwa, 12.i.1914, S. A. Neave [Prey: Coleoptera, Chrysomelidae, 'Galeruca sp.' & Hymenoptera, Formicidae, 'Crematogaster sp. ♀'] (BM); 1 ♂ 1 ♀, Blantyre [15°47'S: 35°00'E], 1914, J.B. Davey (BM). MOZAMBIQUE: 1 ♂ 1 ♀, Vallee du Pungoue, Guengere [19°05'S:34°15'E], 1906, G. Vasse (MNP). ZAMBIA: 1 ♀ [terminalia now missing], Lusenfura [? Lusemfwa 14°35'S: 29°07'E], N.W.R., 3.10 [ie. 3.x.] 1912–20, Silverlock Coll. (BM). ZIMBABWE: 1 ♂, Rusapi [18°31'S: 32°15'E], 19.xii.1920, Rhodesia Museum, (NMZ). NM Type No. 10.

Distribution: Malaŵi, Mozambique, Zambia and Zimbabwe (Table 1, Fig. 123).

Biological data: I collected a few specimens in sparse, moderately long grass on the edge of a road adjacent to a small patch of trees. Nine BM specimens from Malaŵi are pinned together with prey as follows (detailed identifications are given in the list

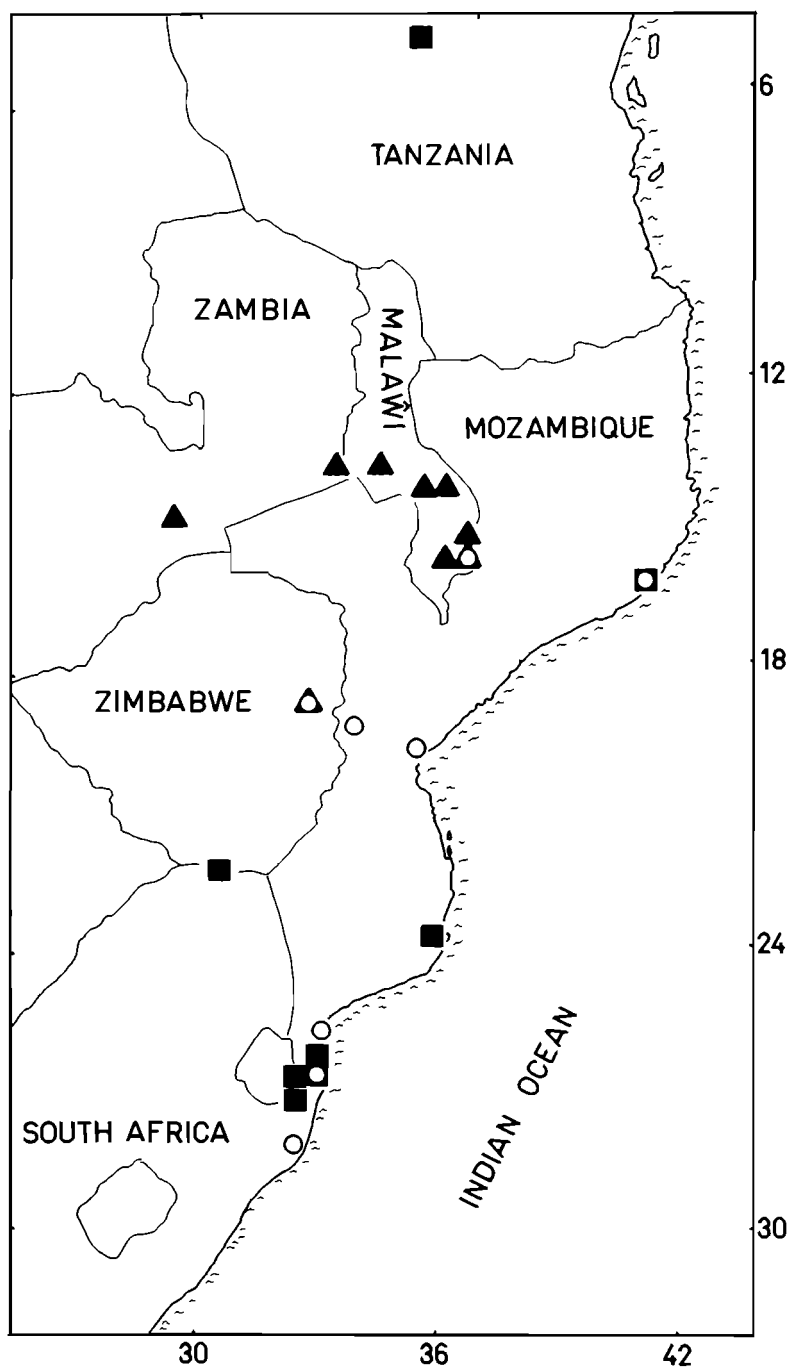


Fig. 123. Distribution of *Damalis neavei* sp. n. (▲), *D. pulchella* Bromley (○) and *D. venusta* Bertoloni (■).

of material examined above): 1 *Lepidoptera* — Olethreutidae (1); 3 *Coleoptera* — Chrysomelidae (2), ? (1); 3 *Hymenoptera* — Formicidae (3); 2 *Hemiptera* — Membracidae (1), ? Cicadellidae (1).

Relationship: Most closely related to *pulchella* and *venustus* but also, though more distantly, to *angola* and *poseidon*.

Damalis pollinosa, Ricardo, 1925 stat. rev.

Figs 124–132, 205

Damalis pollinosa, Ricardo, 1925: 249; Hull, 1962: 55.

Damalis pollinosa Hermann; Lindner, 1955: 31 (*nomen nudum*).

Damalis pallinota, Hermann, 1926: 184; Hull, 1962: 55 syn. n.

Damalis maxima Hermann, 1926: 185; Hull, 1962: 55.

Xenomyza pallinota; Oldroyd, 1974: 127; Oldroyd, 1980: 372.

Xenomyza maxima; Oldroyd, 1974: 127 (nec Hermann); Oldroyd, 1980: 372.

Xenomyza pollinosa Ricardo; Oldroyd, 1980: 372 (as synonym of *pallinota*).

Xenomyza taciturna, Oldroyd, 1970: 289; Oldroyd, 1980: 372 syn. n.

Damalis taciturna; Theodor, 1976: 79.

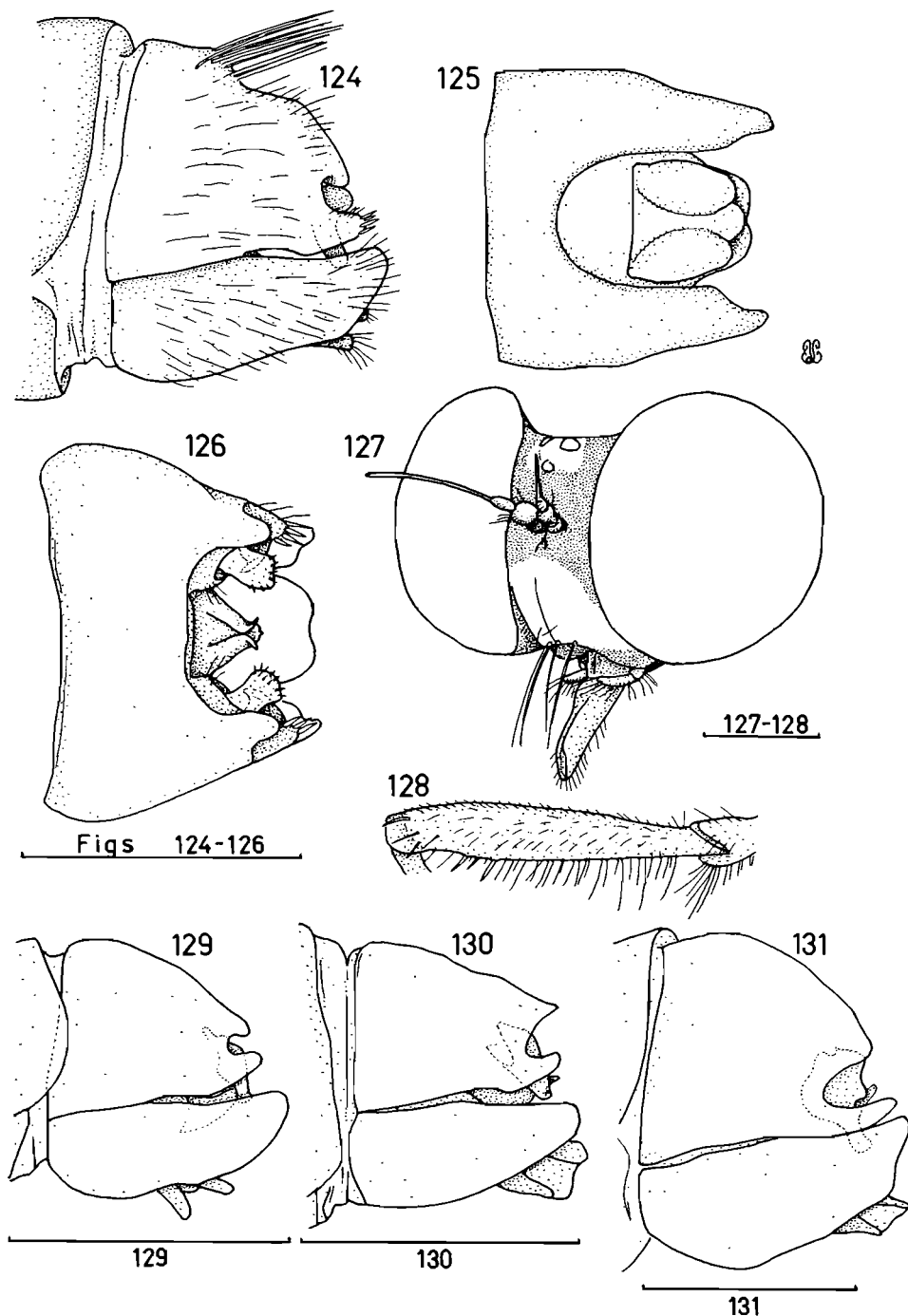
Redescription: Based on lectotype ♀ (Malawi, Mlanje) unless otherwise indicated.

Head: Dark brown, fine silver-gold pruinose with shiny apruinose areas as noted. Antennal setae brown and dark red-brown; scape with moderately well-developed dorsal protuberance; sockets abutting. Eye: face width ratio = 2.2. Face flat, lower facial margin depressed; pruinose except for lower two-thirds. Frons and vertex pruinose except for rectangular area encompassing ocellar tubercle (Fig. 127). Mystax composed of 4 black bristles on lower facial margin. Palp brown; slender fusiform.

Thorax: Sct dark brown; uniformly gold-silver pruinose. Pprn lb with shiny apruinose area posteriorly; pal cal largely pruinose; major scutal setae yellow, not clearly differentiated. 6 pale yellow-white upwardly directed sctl s; sctl pruinose except for hind margin. Length: height ratio of scutum = 1.7. Postmetacoxal area entirely membranous. Pleura uniform fine gold-silver pruinose. Wing 9.3 × 3.0 mm; microtrichia completely absent; venation (Fig. 205—*Viphya* ♀); distal part of R_{2+3} very gently curved anteriorly; membrane uniformly unstained. Halter yellow-brown. Legs red-brown, anterior and posterior tips of femora dark red-brown; mesothoracic leg lacking processes; fem 3 = 3.3 mm (Fig. 128).

Abdomen: Terga red-brown; fine gold-silver pruinose except for apruinose latero-distal parts; setae short shiny white. Sterna similar but with a small apruinose spot laterally at about midlength and with longer setae.

Variation: ♂ similar to ♀. ♂ genitalia (Figs 124–126 Malawi, Kasungu National Park; 129 paratype *taciturna*, Congo, Inimvua; 130 Malawi, Chikangawa; 131 holotype *maxima* N Nigeria). Cerci not fused distally; hypcrct extending beyond cerci. Specimens vary considerably in size over the range of the species. Those from the north, including types of *maxima*, are fairly large, while those from the south are somewhat smaller. The distribution of pruinescence on the face, frons and vertex appears to vary geographically. The ♂ genitalia are however fairly uniform throughout the range and so, at least for the present, I consider all the observable variation to be intraspecific. ♀ specimens are difficult to separate from those of *complecta* and *drilus* and so only ♂ specimens provide sure identifications.



Figs 124-131. *Damalis pollinosa* Ricardo. 124-126. ♂ genitalia. 124. Lateral. 125. Ventral. 126. Dorsal. 127. Head showing pruinoscence pattern of face and vertex. 128. Right metathoracic femur, anterior aspect. 129-131. ♂ genitalia, lateral, variation. 124-126 = ♂ (Malawi, Kasungu National Park); 127 = ♂ (Zimbabwe, Bazeley Br.); 128 = ♂ paratype (Malawi, Mt Mlanje); 129 = ♂ paratype *taciturna* (Congo, Inimvua); 130 = ♂ (Malawi, Chikangawa); 131 = ♂ holotype *maxima* (Nigeria).

Material examined: ANGOLA: 2 ♀, 7 mls W Gabela [10°56'S:14°24'E], 16–18.iii.1972, Southern African Exp. (BM); 1 ♂ 1 ♀, 5 mi E Vila Arriaga [14°44'S:13°24'E], 13.xii.1966, Ross & Lorenzen, 920 m (CAS); 1 ♀, 7 mi W Xandel [?], 4.xii.1966, Ross & Lorenzen, 1 170 m (CAS); 1 ♀, 11 m W Salazar, 3.xii.1966, Ross & Lorenzen, 420 m (CAS). BENIN: 1 ♂, Cercle de Djougou [9°42'N:1°40'E]—Kouande, Kika, 1908, Lieut Brot (MNP). CAMEROUN: 1 ♀, Sawmill, 10 m W Tekmo [3°09'N:12°05'E], 13.x.1966, Ross & Lorenzen, 710 m (CAS); 1 ♀ Ekok, 24 mi E Tekmo, 11–12.x.1966, Ross & Lorenzen, 650 m (CAS); 1 ♀, Edea [?], Reis (SIW); 1 ♂, Cameroun (ZSM). CENTRAL AFRICAN REPUBLIC: 1 ♂, Dept. de la lobaye, Env. de Bagandou [3°48'N: 17°51'E], 14.ix.1967, Matile (MNP); 2 ♀, La Maboke ?, 24 25.ix.1970, Matile (MNP); 1 ♀, La Maboke, 1963, Teocchi (MNP). KENYA: 2 ♀, Nairobi [1°17'S:36°50'E], iv.1922 iv.1927 iii.1930, Van Someren (BM); 1 ♀, Raimosi [?], iv.1922, Van Someren (BM). MALAWI: 1 ♀, 11 mi NW Nkata ay, 21.ii.1958, Ross & Leech, 590 m (CAS); 1 ♂ 4 ♀, Viphia Mtns. Chikangawa, 1133DD, 5–8.xii.1980, Stuckenberg & Londt, forest edge & grassl. (NM); 1 ♂, Viphia, Chikangawa, SE1133DD, 27.ii.–1.iii.1987, Londt, grassland & forest margins (NM); 2 ♀, Chimaliro For. Res., 1233BC, 9.xii.1980, Stuckenberg & Londt, 1 200 m, *Brachystegia* woodland (NM); 1 ♂, Kasungu Nat. Park, Lifupa Camp, 1333AA, 9–10.xii.1980, Stuckenberg & Londt, *Brachystegia*, 1 000 m (NM); 3 ♀ (lectotype & paralectotypes), Mt Mlanje [15°57'S:35°36'E], 12 & 31.xii.1912, Neave (BM); 2 ♀, Mlanje, 17 20.ii.1914, Neave (BM); 2 ♀, Mt Mlanje, 19.xii.1912 9.i.1913, Neave (BM); 1 ♂ 2 ♀, Mt Mlanje [15°57'S:35°36'E], 11.xii.1912 9.i. 26.ii.1913, Neave (ZSM); 1 ♀, Zomba Plateau, 1535AD, 13–14.xii.1980, Londt & Stuckenberg, montane forest, 1 500 m (NM). NIGERIA: 1 ♂ (holotype *maxima*). Around Comu [?] near stream and in thick bush, 14.vi.1912, Scott Macfie (ZSM); 1 ♀, Bipini [?] (ZSM); 1 ♀, Kumba [? Kumbo—4°39'N:9°26'E], 7.x.1949, Oldroyd (BM); 1 ♂, N. Nigeria, Zaria, Samaru [9°45'N:8°23'E], 18.vi.1966, Deeming (BM); 1 ♂ 1 ♀, Zaria, Samaru [9°45'N:8°23'E], vi.1979 (♀) 26.vii.1973 (♂), Deeming (NMOW). SOUTH AFRICA: *Transvaal*: 1 ♀, Nyandu Bush [2231CB], K.N.P. [Kruger National Park] Survey, 3.xii.1964, Vari & Potgieter (NM); 1 ♂, Nelspruit nr Barberton [25°47'S:31°03'E], i.1939, Lawrence (SAM). *Natal*: 2 ♀, Kosi Bay Nature Reserve, 2632DD, 30.xi.–2.xii.1982, Londt Barraclough & Stuckenberg, forest & open woodland areas (NM), 2 ♀, Manguzi River nr Maputa [26°59'S:32°45'E], xi–xii.1945, Bell-Marley (DM); 1 ♂, Dukuduku between St Lucia & Matubatuba [28°23'S:32°19'E], 7–8.iv.1960, Stuckenberg (NM). TANZANIA: 2 ♂, Kilimandjaro [3°07'S:37°20'E], versant sud-est, zone inferieure Neumoschi, iv.1912, Alluaud & Jeannel, St 72, 800 m (ZSM); 1 ♂ 6 ♀, Makoa [? Makowa 5°45'S:36°36'E], 4 7 8 10.iv.1959 1–15.iv.1959, Lindner, Lichtfang 1 ♂ 2 ♀ (SMS); 1 ♀, Dar-es-Salam [5°15'S:38°50'E], 11–20.xii.1951, D.O. Afrika Exp. (SMS); 1 ♂ 4 ♀, Handeni [5°25'S:38°04'E], 25/27.iv.1957, Miss. Zool. IRSAC en Afrique orientale, Basiliwsky et Leleup, 350 m (KMT); 1 ♀, Tanga [5°07'S:39°05'E], iv.1912, Alluaud & Jeannel, St 74 (ZSM); 1 ♂ 1 ♀, Zanzibar [6°02'S:39°20'E], Cooke (SIW). UGANDA: 1 ♀, Madi [2°49'N:31°15'E], v.1927, Carpenter (BM). ZAÏRE: 2 ♂ (holo & paratype *taciturna*) 4 ♀ (paratypes), Congo Belge, P.N.G., Inimvua [? Inimvwa 4°35'N:29°43'E], 16.v.1952, Miss H. De

Saeger, 3461 (KMT); 3 ♂ (paratype *taciturna*) 9 ♀ 1? (paratypes), Congo Belge, P.N.G., Inimvua, 16.v.1952, Miss H. De Saeger, 3480 (KMT); 1 ♀ (paratype *taciturna*), Congo Belge, P.N.G., Inimvua, 20.v.1952, Miss H. De Saeger, 3488 (KMT); 1 ♂ (paratype *taciturna*), Congo Belge, P.N.G., Mt Embe [4°40'N:29°32'E], 21.v.1952, Miss H. De Saeger, 3367 (KMT); 1 ♀ (paratype *taciturna*), Congo Belge, P.N.G., Mt Embe, 18.v.1952, Miss H. De Saeger, 3348 (KMT); 2 ♀ (paratypes *taciturna*), Congo Belge, P.N.G., Pidigala [? Pidigara 4°14'N:29°18'E], 23.iv.1952, Miss H. De Saeger, 3328 3352 (KMT); 1 ♂ (paratype *taciturna*), Congo Belge, P.N.G., Mabanga [0°59'N:23°33'E], 23.v.1952, Miss H. De Saeger, 3549 (KMT); 3 ♀ (paratypes *taciturna*), Congo Belge, P.N.G., Aka/2 Aka [1°38'S:27°07'E], 19 & 22.v.1952, Miss H. De Saeger, 3476 3515 (KMT); 2 ♀ (paratypes *taciturna*), Congo Belge, P.N.G., 1949–1952, Miss H. De Saeger (KMT); 1 ♀ (paratype *taciturna*), Congo Belge, P.N.G., I/a/1, 1.v.1950, Miss H. De Saeger, Rec G. Demoulin 469 (KMT); 1 ♀ (paratype *taciturna*), Congo Belge, P.N.G., II/gc/6, 14.viii.1952, Miss H. De Saeger, 3941 (KMT); 1 ♀ (paratype *taciturna*), Congo Belge, P.N.G., Dedegwa [?], 17.v.1952, Miss H. De Saeger, 3481 (KMT); 1 ♀, Mayumbe, Tshela [4°57'S:12°57'E], 30.iii.1924, Collart (KMT); 1 ♂, Bukama [9°13'S:25°52'E], xi.1911, Bequaert (KMT); 1 ♀, Kapanga [13°03'S:34°20'E], xi.1933, Overlaet (KMT); 1 ♀, Lulua, Kapanga, ii.1933, Overlaet (KMT); 1 ♀, Mayidi [?], 1942, Van Eyen (KMT); 1 ♀, Yangambi (Stanleyville) [0°47'N:24°24'E], v.1959, Dessart (KMT); 1 ♂, Kivu, Mulungu, Tshibinda [5°52'S:21°20'E], xi.1951, Lefevre (KMT); 2 ♂ 12 ♀, Kifumashi Elizabethville [11°40'S:27°28'E], S'herbes vivants, 22 23 24.xi.1955, Lips (KMT); 1 ♀, Elizabethville, xi.1911, Miss. Agric. (KMT); 1 ♀, Lokolenge (Lulonga) [0°37'N:18°23'E], 12.v.1927, Ghesquiere (KMT); 1 ♀, Jodotville, Numbi [9°03'S:26°14'E], v.1957, de Caters (KMT); 1 ♀, N. Sankuru, Lomela [2°18'S:23°17'E], 1955, Hanotier (KMT); 1 ♀, Uele [4°09'N:22°26'E], Aba-30.iv.1914, Rodhain (KMT); 1 ♀, Costermansville [2°30'S:28°52'E], viii. 1949, Bomans (KMT); 1 ♀, 4 mi S Sampwe [9°20'S:27°26'E], 20.i.1958, Ross & Leech (CAS); 5 ♀, Ogooue, Lambarene [0°42'S:10°13'E], 1911 1912 1913, Ellengerger (MNP). ZAMBIA: 1 ♂, Vict. Falls [7°55'S:25°52'E], N. Rhodesia, xii.1955, Nat. Mus. S. Rhod. (NMZ); 1 ♀, Chilanga [15°39'S:28°19'E], 22.vii.1913, Wood, on path (BM). ZIMBABWE: 1 ♂, Musoarie Farm, Mtorashango, nr Banket [17°22'S:30°29'E], 15.xii.1972, Wheeler (NMZ); 9 ♂ 11 ♀, Crocodile Pool farm, Banket [17°22'S:30°29'E], 15.xii.1977, Wheeler (NMZ); 1 ♂, Mazoe [17°30'S:31°03'E], 6–17.i.1920, Janse (NM); 1 ♂, Sawmills [19°31'S:28°02'E], 24.xii.1927, Rhod. Mus. (NMZ); 1 ♂ 1 ♀, Vumba Mts, Umtali Dist. [19°53'S:31°22'E], iii.v.1938, Dept. Agric (ZSM); 1 ♀, Vumba Mts, iii.1935, Cuthbertson (ZSM); 1 ♂ 1 ♀, Bazeley Br [Bazeley Bridge 19°00'S:32°40'E], 28.i.1963 1.i.1965, Cookson (NM); 1 ♂ 4 ♀, Vumba, Umtali Dist. [19°00'S:32°40'E], 19.ii. iii.1931 ii.1932, Sheppard (NM); 1 ♀, Bazeley Br. [Bazeley Bridge 19°00'S:32°40'E], 28.i.1963, Cookson (NM); 1 ♂, Bazeley Br., 15 m S. Umtali, 1.i.1965, Cookson (NM); 1 ♀, Mt Selinda, S. Melsetter [19°48'S:32°50'E], i.1966, Nat. Museum S. Rhod. (NMZ); 2 ♀, Bulawayo [20°10'S:28°43'E], 25.i.1976 xii.1977, Wheeler (NMZ); 1 ♀, Bulawayo, 11.xii.1921, Rhod. Mus. (NMZ); 1 ♀, Maleme Matopos, Bulawayo, 9.xii.1967, Pinhey (NMZ).

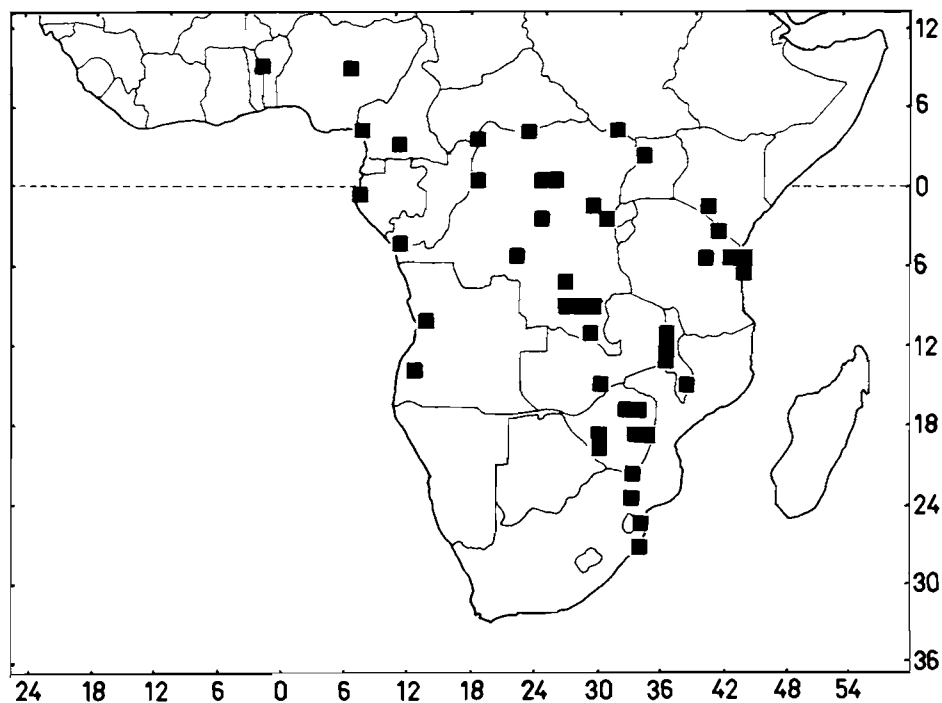


Fig. 132. Distribution of *Damalis pollinosa* Ricardo.

Distribution: A widespread species covering a large part of tropical subsaharan Africa (Table 1, Fig. 132).

Discussion of synonymy and lectotype designation: Much confusion has developed around the names *pollinosa* and *pallinota*. I believe that this came about in the following way. Hermann was sent a series of specimens by the BM to study. He identified a new species, *pallinota*, on the basis of some 26 specimens (no holotype designated) from Sierra Leone, Nigeria, Malawi and Tanzania, submitted his manuscript for publication (20.iv.1921), and returned the BM material under cover of a suitable letter. A few years later Ricardo correctly noticed that the description of Hermann's species had not been published, and, using the BM material from Malawi, decided to validate the name (which she presumably misread as *pollinosa* in Hermann's letter). Her paper containing the description of '*Damalis pollinosa* Hermann, *in litt*, sp. n.' appeared in 1925. Hermann's manuscript had, however, been in press for some four to five years and eventually appeared in 1926. This meant that the name *pallinota* Hermann became at once a synonym of *pollinosa* Ricardo. This unfortunate series of events has, however, never become apparent. Oldroyd (1981) was without doubt incorrect in suggesting that *pollinosa* Ricardo was merely an incorrect spelling of *pallinota*. To further confuse the issue, Lindner (1955), who appears to have understood the problem, listed a single ♀ specimen of what he calls '*Damalis pollinosa* Herm. i. litt. (nec *pallinota* !)' from 'Dar-es-Salam' saying that he believed it to be conspecific with Hermann's material in ZSM (ie.

pallinota). I have seen Lindner's ♀ (and additional material collected by Lindner himself in 1959) and agree with his assessment. It therefore appears that Lindner's '*Damalis pollinosa* Hermann' is merely a *nomen nudum*, and not, as Oldroyd (1980) would have us believe, a new species (it is clear that Lindner never intended this—after all he would have been knowingly creating a homonym in the process).

Ricardo's description was based on 8 ♀ specimens in the BM and I here designate one of them (Mt. Mlanje, 13.xii.1912, S. A. Neave) as lectotype. Ricardo's other specimens are paralectotypes. Ricardo did not study Hermann's ZSM material.

Oldroyd (1970) described four new species from the Congo without reference to any of the then known Afrotropical species. His *Xenomyza taciturna* is here considered a synonym of *pollinosa* Ricardo.

Biological data: I have collected this species in grass adjacent to forest. Cuthbertson (1938), under the heading of *Lophurodamalis longipennis* Loew (see under *chelomakonon*) provides notes on *pollinosa* (as *Damalis pallinota* Herm.). This species was observed sympatrically with *chelomakolon* feeding on 'winged termites, small fungus-gnats, small Hymenopterous parasites (Chalcidae, Braconidae and Proctotrupidae) and a Staphylinid beetle'. He goes on to say 'The flies rest on long grass stems, and make short capture darts at small flying insects. The mating habits are quite different from those of *Lophurodamalis longipennis*'.

Relationship: Most closely related to *drilus* but also related to *complecta* and more distantly to *achilles* and *hyalipennis*.

Damalis poseidon (Oldroyd, 1970). **Comb. n.**

Figs 133–138, 206

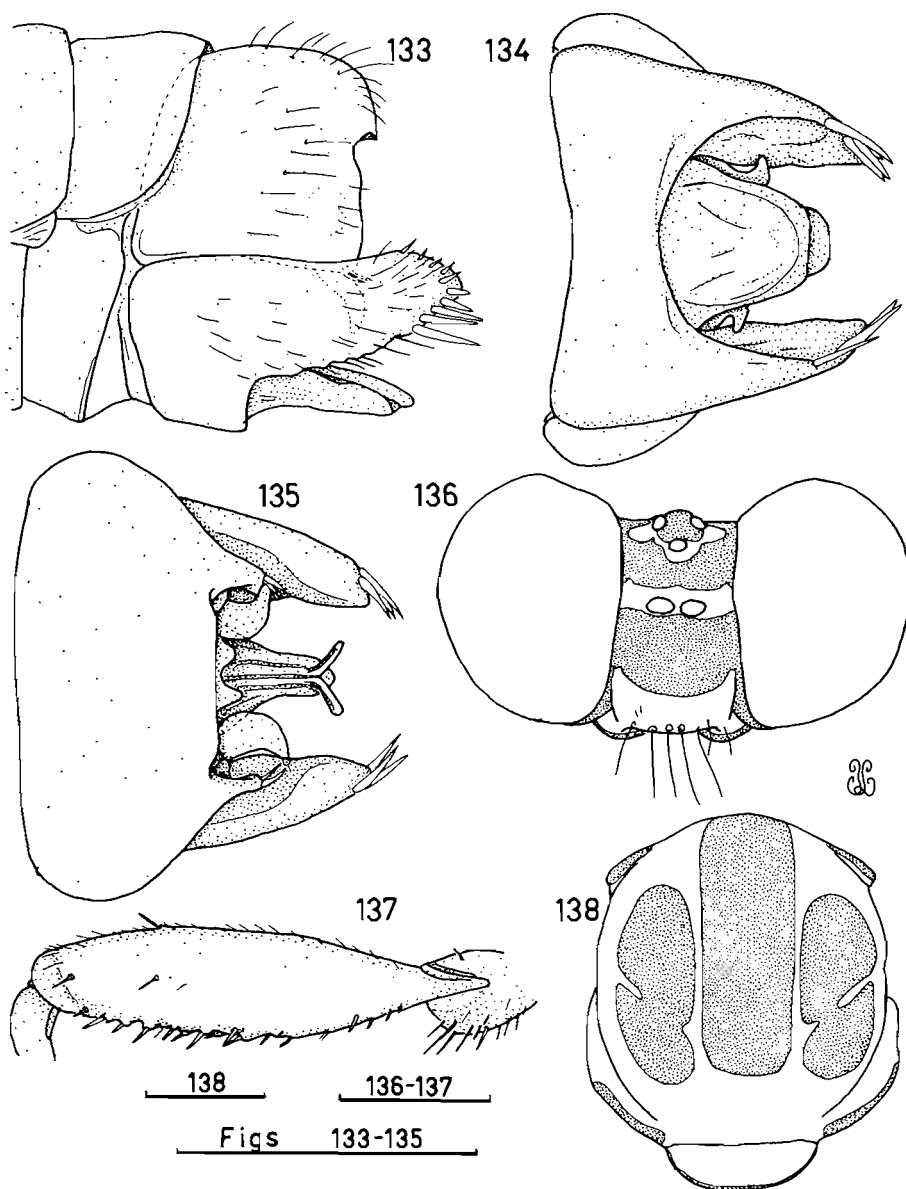
Xenomyza poseidon, Oldroyd, 1970: 291; Oldroyd, 1980: 372.

Description: Based on holotype ♂ (Zaire, Elisabethville).

Head: Black, silver pruinose except for some shiny apruinose areas as noted. Antennal setae dark red-brown; scape with poorly developed ventral protuberance only; sockets abutting. Eye: face width ratio = 1.7. Face flat, lower facial margin depressed; pruinose except for lower one-third. Frons and vertex with pattern of apruinose areas (Fig. 136). Mystax composed of 6 black bristles confined to lower facial margin. Palp dark red-brown; slender fusiform.

Thorax: Sct dark red-brown to black; silver pruinose except for extensive apruinose areas (Fig. 138). Pprn lb and pal cal extensively shiny apruinose; major scutal setae not clearly differentiated. Sctl s minute (considered absent); sctl pruinose except for hind margin. Length:height ratio of scutum = 2.1. Postmetacoxal ridge narrow but complete. Pleura except for parts of anepst and anepm fine silver pruinose. Wing 6.3 × 2.5 mm; microtrichia absent from alula, cell a_1 and posterior margins of all other posterior cells; venation (Fig. 206—paratype ♀ Elisabethville); distal part of R_{2+3} bent gently posteriorly; membrane slightly yellow-stained. Halter yellow-brown. Legs dark red-brown to black, tib 3 brown-yellow proximally; mesothoracic leg lacking processes; fem 3 = 2.7 mm (Fig. 137).

Abdomen: Terga dark red-brown to black; silver pruinose anteriorly and laterally; setae short pale yellow. Sterna similar. Genitalia (Figs 133–135); epand with group of stout bristles distally; cerci completely fused and moderately truncate distally; hypocrit extending slightly beyond cerci, also somewhat truncate.



Figs 133–138. *Damalis poseidon* (Oldroyd). 133–135. ♂ genitalia. 133. Lateral. 134. Ventral. 135. Dorsal. 136. Head showing pruinose pattern of face and vertex. 137. Right metathoracic femur, anterior aspect. 138. Pruinescence pattern of scutum. 133–138 = ♂ holotype (Elisabethville).

Variation: ♂ similar to ♀ (paratype lacks head).

Material examined: ZAÏRE: 1 ♀, 44 mi E of Kileba [8°45'S:27°24'E], 16.i.1958, Ross & Leech 111 m (CAS); 1 ♂ (holotype), Elisabethville [11°40'S:27°28'E], 12.xii.1924, M. Bequaert (KMT); 1 ♂ (paratype), Elisabethville, Lubumbashi, 20.xii.1920, M. Bequaert (KMT).

Distribution: Known only from Zaïre (Table 1).

Biological data: Nothing known.

Relationship: Most closely related to *angola* but also related to *neavei*, *venustus* and *pulchella*.

Damalis pulchella Bromley, 1952 stat. rev.

Figs 123, 139–143, 207

Damalis pulchella, Bromley, 1952: 20.

Xenomyza pulchella, Oldroyd, 1980: 372.

Redescription: Based on holotype ♂ (South Africa, Mangusi River).

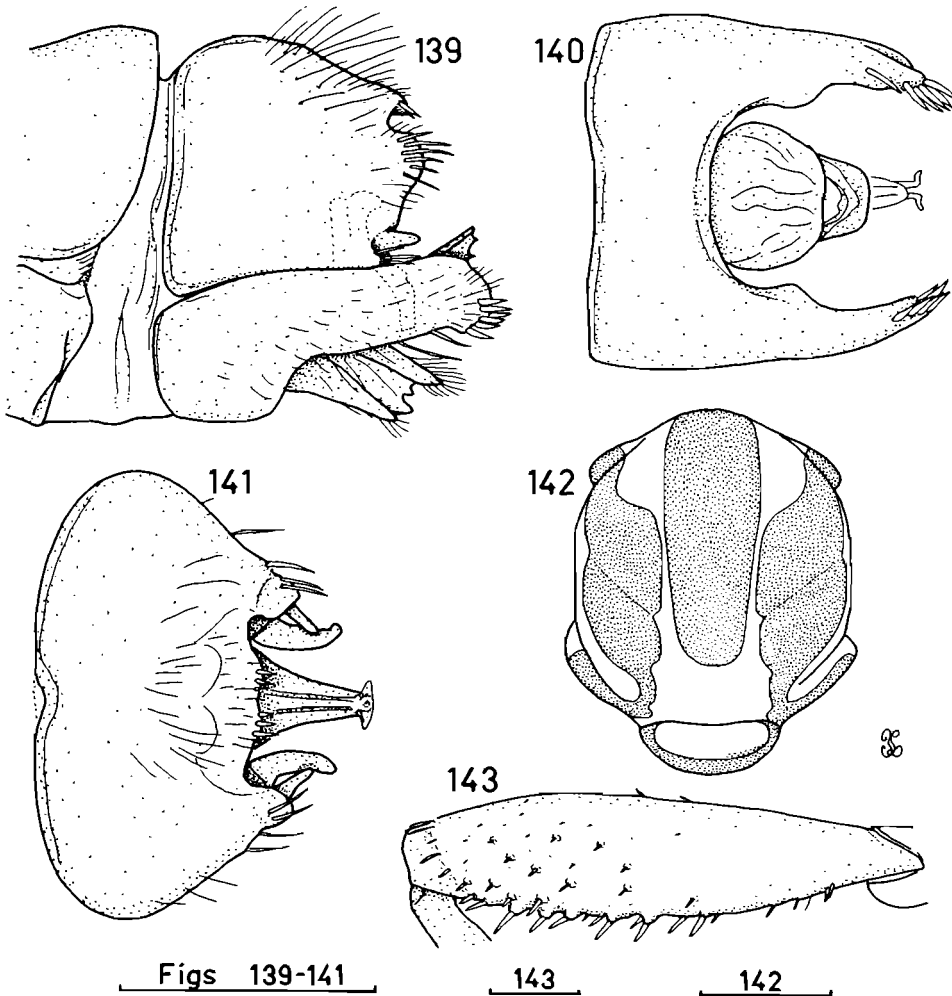
Head: Dark red-brown except for lower one-third of face which is brown-yellow, silver pruinose except where noted. Antennal setae short dark red-brown; scape lacking protuberances; sockets abutting. Eye:face width ratio = 2.0. Face flat, lower facial margin depressed; uniformly pruinose except for lower one-quarter. Frons and vertex pruinose, apruinose strip between eyes at level of antennal bases and between median ocellus and antennal bases. Mystax composed of *ca* 10 pale yellow bristles confined to lower facial margin. Palp yellow-brown; slender fusiform.

Thorax: Sct dark red-brown to black centrally, yellow-brown laterally; silver pruinose except for apruinose pattern (Fig. 142). Pprn lb with shiny apruinose spot; pal cal entirely shiny apruinose; major scutal setae small, not clearly differentiated. Sctl s minute (considered absent); sctl mostly apruinose except for anterior silver pruinose strip. Length:height ratio of scutum=2.0. Postmetacoxal bridge complete. Pleura except for parts of anepst and anepm silver-gold pruinose. Wing 7.9 × 3.0 mm; microtrichia absent except for anterior margin of stained area; venation (Fig. 207—Lake St Lucia ♀); distal part of R₂₊₃ bent fairly strongly anteriorly; membrane brown-stained basally (from about level of r-m crossvein). Halter brown-yellow stem, dark brown knob. Legs brown-yellow, anterior aspects of all femora and ventral aspects of all tibiae red-brown, all femora with tips dark red-brown anteriorly and posteriorly; mesothoracic leg lacking processes; fem 3=3.6 mm (Fig. 143).

Abdomen: Terga yellow-brown; entirely shiny apruinose; setae short yellow. Sterna similar but with transverse fine silver pruinose strips; setae sparse, pale yellow. Genitalia (Figs 139–141—paratype); cerci completely fused and moderately truncate distally; hyprct extending slightly beyond cerci, also somewhat truncate.

Variation: ♂ similar to ♀.

Material examined: MALAWI: 3 ♀, Mt Mlanje [15°57'S:35°36'E], 16.xi.23.xii.1912, Neave (ZSM). MOZAMBIQUE: 1 ♂, Lourenco Marques [=Maputo



Figs 139–143. *Damalis pulchella* Bromley. 139–141. ♂ genitalia. 139. Lateral. 140. Ventral. 141. Dorsal. 142. Pruinescence pattern of scutum. 143. Right metathoracic femur, anterior aspect. 139–141, 143 = ♂ paratype (Manguzi River); 142 = holotype (Manguzi River).

25°58'S:32°35'E], i–iii.1914, Jonod, 'Est NK' (BM); 1 ♀, Masiene, P E Afr [? Masiuene—16°24'S:39°53'E], xii.1923, Lawrence (SAM); 1 ♂ 1 ♀, Dondo Forest [19°36'S:34°44'E], 27.x.1963, Nat. Museum S. Rhodesia (NMZ); 1 ♀, Vila Pery [19°08'S:33°29'E], x.1929, Lesne (MNP). SOUTH AFRICA: *Natal*: 2 ♂ (holotype & paratopotype), Manguzi River nr. Maputa, Z. 2632DD, xi–xii.1945, H. Bell Marley (DM); 1 ♀ (paratopotype), Manguzi River nr. Maputa, Z., xi–xii.1945, H. Bell Marley (SIW); 1 ♀, lake St Lucia, False Bay Park [2832AB], 9–15.x.1985, Manning, thick sandforest (NM). ZIMBABWE: 1 ♂ 2 ♀, Bazeley Bdge, Odzi River [18°59'S:32°29'E], i.1966, Nat Mus Bulawayo (NMZ); 1 ♀, Umtali [18°59'S:32°29'E], xii.1956, Nat. Museum S. Rhodesia (NMZ).

Distribution: From Malaŵi south through Zimbabwe and Mozambique into northern Natal, South Africa (Table 1, Fig. 123).

Type specimens: Bromley lists 6 types (1 ♂ holotype, 1 ♀ allotype, 4 paratypes—sexes not stated). His type series was a mixture of *pulchella* and *venustus* and I have seen a total of 2 ♂ 6 ♀ bearing type labels (5 ♀ are listed under *venustus*). This discrepancy cannot be explained.

Biological data: Nothing known.

Relationship: Most closely related to *venustus* but also to *neavei*, *angola* and *poseidon*.

Damalis scutellata (Oldroyd, 1970) **comb. n.**

Figs 144–147, 208

Xenomyca scutellata, Oldroyd, 1970: 292; Oldroyd, 1980: 372.

Redescription: Based on holotype ♂ (Zaire, Aka).

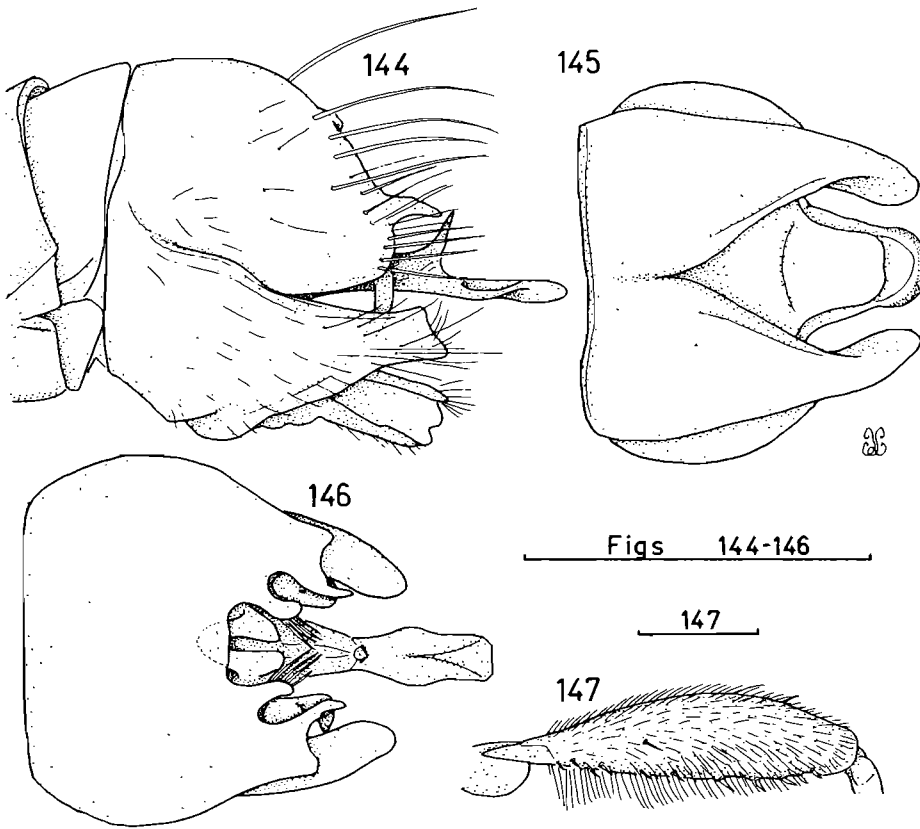
Head: Dark red-brown, fine gold-red pruinose. Antennal setae dark red-brown; scape with poorly developed dorsal protuberance only; sockets abutting. Eye: face width ratio = 1,7. Face flat, lower facial margin depressed; entirely pruinose. Frons and vertex uniformly pruinose. Mystax composed of 8 pale yellow-white bristles confined to lower facial margin. Palp dark brown; shortish, slender fusiform.

Thorax: Sct dark red-brown to black; gold-red pruinose centrally, silver laterally. Pprn lb pruinose except for a tiny shiny apruinose posterior spot; pal cal quite extensively apruinose; major scutal setae weakly differentiated. Sctl with 4 long (twice length of sctl) pale yellow setae; sctl apruinose except for narrow pruinose anterior margin. Length:height ratio of scutum = 1,9. Postmetaxocal bridge complete, narrow, Pleura including anepst and anepm uniform silver pruinose. Wing 5,4 × 1,9 mm; entirely covered with microtrichia; venation (Fig. 208—Ejura ♂); R₂₊₃ straight; membrane uniformly unstained. Halter pale brown-yellow. Legs brown-yellow, femora slightly darker; mesothoracic leg lacking processes; fem 3–3,0 mm (Fig. 147).

Abdomen: Terga dark red-brown; entirely fine gold-red pruinose; setae poorly developed, pale yellow laterally. Sterna dark brown, fine gold pruinose, each with an apruinose spot laterally; setae pale yellow. Genitalia (Figs 144–146); epand appears partly fused with hypd proximally; tips of epand lobes slightly inclinate; aed longish with dorsal subapical spine and spatulate tip; cerci fused; hyprct extending slightly beyond cerci.

Variation: ♂ similar to ♀. There appears to be some variation in the size of specimens as well as in the extent of setation and microtrichial coverage of wing membrane. Although a little variation in ♂ genital structure is also evident I have accepted this as intraspecific.

Material examined: CAMEROUN: 1 ♀, N'Kolbison [3°51'N:11°37'E], 29.iv.1966, Nonveiller (MNP); 1 ♀, Sud Cameroun, Pres Bidou I [3°01'N:10°06'E], 6.xi.1970, Plant eaux et Forêts, Matile (MNP). CENTRAL AFRICAN REPUBLIC: 2 ♀, La Maboke, iv–v.1964, Carayon (MNP). GHANA: 1 ♂, Ejura [7°23'N:1°15'W],



Figs 144-147. *Damalis scutellata* (Oldroyd). 144-146. ♂ genitalia. 144. Lateral. 145. Ventral. 146. Dorsal. 147. Left metathoracic femur, anterior aspect. 144-147 = ♂ holotype (Aka).

2.v.1949, J.B. (BM); 1 ♀, Kumasi [6°45'N:1°35'W], 14.v.1947, 447 GC At (BM). IVORY COAST: 1 ♀, Banco, Abidjan [5°19'N:4°02'W], 3.xi.1970, Tsacas (MNP). NIGERIA: 3 ♀, Obuan CR [?] SE State, 25.iii.1971, Medler (BM). SIERRA LEONE: 1 ♂ 1 ♀ 1?, Freetown [8°30'N:13°17'W], 1940, Ribbands, low herbage sandy soil (BM). ZAÏRE: 1 ♀ (paratype), Congo Belge, Bambesa [3°28'N:25°43'E], 30.viii.1933, Leroy, (KMT); 1 ♀ (paratype), Congo Belge, Eala [0°04'N:18°17'E], ix.1930, Dr P. Staner, (KMT); 1 ♀ (paratype), Congo Belge, Wamba [0°02'N:22°33'E], 1936, Dr Degotte, (KMT); 1 ♂ (holotype), Congo Belge, P.N.G., Aka [1°38'S:27°07'E], 14.v.1952, H. De Saeger, 3450 (KMT); 2 ♀ (paratypes), Congo Belge, P.N.G., Aka/2, 22.v.1952, H. De Saeger, 3514 (KMT); 4 ♀, Ogooue [? 0°49'S:9°00'E], Sam Kita, 1910, Ellenberger (MNP); 1 ♀ Ogooue, Lambarene [0°42'S:10°13'E], 1913, Ellenberger (MNP). UNKNOWN COUNTRY: 1 ♀, Boukoko [?], 20.vii.1948 (SIW).

Distribution: West African countries of Cameroun, Central African Republic, Ghana, Ivory Coast, Nigeria, Sierra Leone and Zaïre (Table 1).

Biological data: Nothing known.

Relationship: Related to *sphekodes* and *coeruleiventris*.

Damalis simplex Curran, 1934 stat. rev.

Figs 148–152, 209

Damalis simplex, Curran, 1934: 9.*Lophurodamalis simplex*; Hull, 1962: 61.*Xenomyza simplex*; Oldroyd, 1974: 130; Oldroyd, 1980: 372.

Redescription: Based on Vumba ♂ in NM (which was compared directly with holotype).

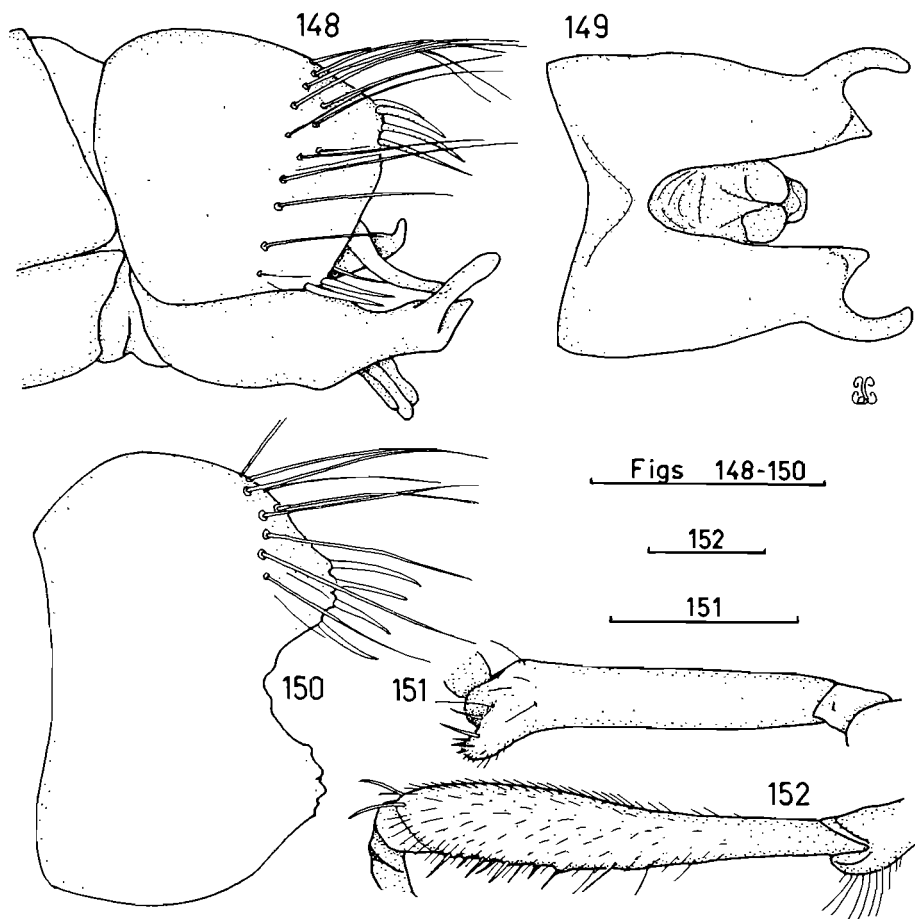
Head: Dark red-brown, gold pruinose. Antennal setae dark red-brown; scape with moderately developed dorsal protuberance; sockets abutting. Eye: face width ratio = 1.9. Face very slightly gibbose, lower margin slightly depressed; uniformly pruinose. Frons and vertex uniformly pruinose. Mystax composed of many dark red-brown bristles covering lower half of face; marginal bristles normal, upper ones directed upwards. Palp dark red-brown; slender fusiform.

Thorax: Sct brown to dark red-brown, colour masked by gold pruinescence. Pprn lb uniformly pruinose; pal cal with distal shiny apruinose area; major scutal setae not clearly differentiated. Ca 8 long yellow sctl s, disc with long yellow setae; sctl pruinose except for hind margin. Length: height ratio of scutum = 1.9. Posterior margins of metepimera extended slightly posteromedially (Fig. 5). Pleura gold pruinose except for vertical strip on anepm which is shiny apruinose. Wing 8.7×3.5 mm; microtrichia cover entire surface giving wing a dark appearance; venation (Fig. 209—Chimanimani Mts ♀); R_{2+3} distally very gently curved anteriorly; membrane uniformly unstained. Halter brown. Legs brown-yellow, anterodistal parts of femora red-brown, tips of femora dark red-brown anteriorly and posteriorly; mesothoracic leg with tib process (Fig. 151); fem 3 = 3.9 mm (Fig. 152).

Abdomen: Terga brown-yellow (distal segments a little darker); lateral margins gold pruinose (seen at base of long setae); setae yellow, as a thick pile medially, long laterally. Sterna red-brown, all setae longish yellow. Genitalia (Figs 148–150—Vumba ♂); epand lobes with finger-like process distally; cerci appear unfused; hypcrt slightly longer than cerci.

Variation: ♂ similar to ♀ but abdomen not as setaceous, terga somewhat darker and tib 2 lacks distal process.

Material examined: MALAWI: 1 ♂ 1 ♀, Nyassaland, 9.iii.1911 iii.1911, Swynerton, 3800 (BM). ZIMBABWE: 1 ♂ (holotype), Vumba, Umtali Dist. [19°00'S:32°40'E], 3.iii.1931, P. A. Sheppard (AMNH); 5 ♂ 2 ♀, Vumba, Umtali Dist. [19°00'S:32°40'E], 3 5 11 12. iii. 1931, Sheppard (NM); 1 ♂ 2 ♀, Vumba, Umtali Dist., 3 12 20.iii.1931, Sheppard (BM); 2 ♀, Vumba, iii.1931, P.A.S. (BM); 2 ♂, Vumba Mts, 1.iii.1938 3.iii.1942, Nat Museum S Rhodesia (NMZ); 1 ♂ 1 ♀, Vumba Mts, 3.iii.1942, Rhodesia Museum (NMZ); 1 ♂, Vumba Mts., iii.1935, Cuthbertson (ZSM); 1 ♂, Vumba Mts., 10.iii.1936, Drysdale (SIW); 2 ♂, Umtali, ii.1928, Rhodesia Museum (NMZ); 1 ♂, Umtali, 26.ii.1926, Rhodesia Museum (NMZ); 1 ♂, Umtali District, 23.ix.1931, Sheppard (BM); 1 ♀, Martins Falls [?=Martin Forest—19°42'S:32°56'E], ii.1958, Nat Museum S Rhodesia (NMZ); 1 ♂, Chimanimani Mts [19°46'S:33°02'E], ii.1958, Nat Museum S Rhodesia (NMZ); 2 ♀, Chimanimani Mts, 28.ii.1960, Goodier 1123 & 1124 (BM); 1 ♂,



Figs 148–152. *Damalis simplex* Curran. 148–150. ♂ genitalia. 148. Lateral. 149. Ventral. 150. Dorsal. 151. Right mesothoracic tibia, anterior aspect. 152. Right metathoracic femur, anterior aspect. 148–150, 152 = ♂ (Vumba); 151 = ♂ (Umtali).

Mount Selinda, Chirinda Forest [20°26'S:32°42'E], 6–8.ii.1959, van Bruggen, 3 500 ft (NCI).

Distribution: Eastern Zimbabwe Highlands and Malawi (Table 1).

Biological data: Nothing known.

Relationship: Closely related to both *speciosa* and *hirtiventris*.

Damalis speciosa Loew, 1858 **stat. rev.**

Figs 153–157, 210

Damalis speciosa Loew, 1858: 354; Loew, 1960: 180.

Damalis speciosus; Kertész, 1909: 95.

Lophurodamalis speciosa; Hermann, 1926: 191. Hull, 1962: 61.

Xenomysa speciosa; Oldroyd, 1974: 126; Oldroyd, 1980: 372.

Redescription: Based on unique holotype (South Africa, Caffraria).

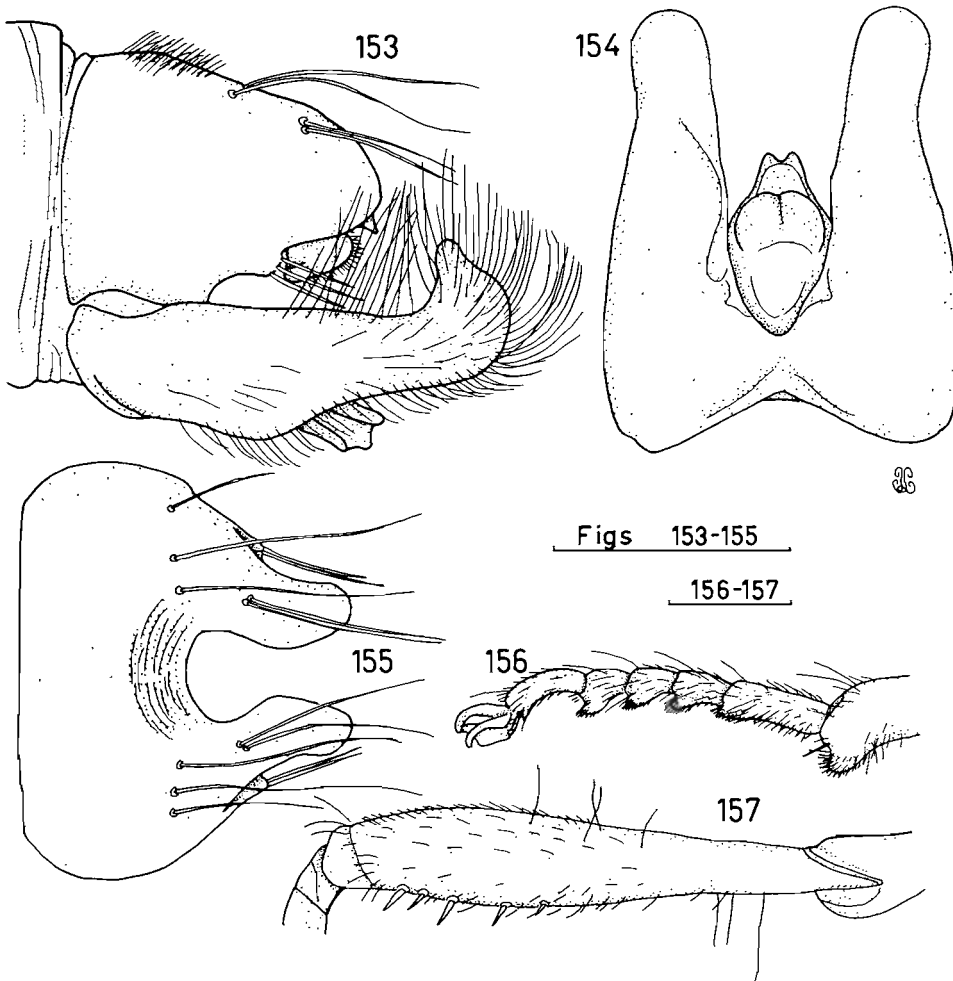
Head: Dark red-brown, yellow-gold pruinose. Antennal setae yellow; scape with moderately developed dorsal protuberance; sockets abutting. Eye: face width ratio = 1,8. Face very slightly gibbose, lower margin slightly depressed; uniformly pruinose. Frons and vertex uniformly pruinose. Mystax composed of many yellow bristles covering most of face; marginal bristles normal, upper ones directed upwards. Palp dark red-brown; slender fusiform.

Thorax: Sct dark red-brown; yellow-gold pruinose. Pprn lb uniformly pruinose; pal cal with distal shiny apruinose area; major scutal setae not clearly differentiated. Ca 12 long yellow sclt s, disc with long yellow setae; sclt pruinose except for hind margin. Length:height ratio of scutum = 1,8. Posterior margins of metepimera extended slightly posteromedially (Fig. 4). Pleura uniformly gold pruinose. Wing 8,7×3,5 mm; microtrichia cover entire surface giving wing a dark appearance; venation (Fig. 210—Umtamvuna Nature Reserve ♂); R_{2+3} distally very gently curved anteriorly; membrane uniformly unstained. Halter yellow. Legs brown-yellow, coxae dark red-brown, anterodistal parts of fem 2 & 3 red-brown, tips of all femora dark red-brown anteriorly and posteriorly; mesothoracic leg with processes on tib and tarsomeres (Fig. 156); fem 3 = 3,7 mm (Fig. 157).

Abdomen: Terga yellow; lateral margins gold pruinose (seen at base of long setae); setae yellow, as a thick pile medially, long laterally. Sterna red-brown, uniform fine gold pruinose except for small anteromedial apruinose spot, all setae longish yellow. Genitalia (Figs 153–155—Umtamvuna ♂); epand lobes upturned distally; cerci almost entirely fused; hypcrct slightly longer than cerci.

Variation: ♂ similar to ♀ but abdomen not as setaceous and mesothoracic leg lacks processes.

Material examined: SOUTH AFRICA: 1 ♂ (holotype), Caffraria (Wahlb.), 3, 109, 268, 233/88 (NRS). *Transvaal:* 2 ♂, Zoutpansberg, Louis Trichardt 2329BB, ii.1928, Lawrence, 4 500 ft (SAM); 6 ♂ 6 ♀, Malta Forest 15 km W Ofcolaco 2430AB, 21.ii.1980, Londt & Schoeman, road & forest margin (NM); 7 ♂ 4 ♀, Malta, Ptbg., i. ii.1928, v Son (NM); 1 ♀, Mariepskop, Pilgrim's Rest Dist. [2430DB], 23–26.ii.1962, Vari & Leleup (NM); 1 ♀, Abel Erasmus Pass, [24°25'S:30°37'E], 10.iii.1981, Mansell (NCI); 1 ♀, Maboki, Lydenb. [2530AB], 1917, Kroeger (SAM); 1 ♀, Boshhoek [Boshhoek—25°49'S:30°25'E] (KMT); 1 ♀, Three Sisters [2531CB], 19.ii.1911, Janse (NM); 2 ♂, Barberton [2531CC], 19–26.iii.1920, G. v D. & Rob (NM); 1 ♀, Barberton, Rendall (BM); 1?, Barberton, iii.1912, Edwards (SAM); 1 ♂, Barberton, iii.1979, Harrop (NCI). *Natal:* 1 ♂, Manguzi Forest [2632DD], 28.v.1986, Quickelberge (DM); 3 ♂ 5 ♀, Kwaliweni Forest, 2731BB, Londt, margins & open grass (NM); 1 ♀, N'Fongosi [2732AC], iii.1917, Jones (SAM); 1 ♂, Loteni, 2929DA, 2.ii.1981, Feijen (NM); 1 ♀, Loteni Nature Res., 2929BC, 28.iii.–2.iv.1986, Londt, campsite/grassveld (NM); 1 ♀, Pietermaritzburg, Town Bush [2930CB], v.1962, Stuckenberg (NM); 1 ♂, Pmb [Pietermaritzburg], 11.ii.1980, Jackson, 650 m (NM); 2 ♂ 6 ♀, Otto's Bluff ca. 11 km N Pietermaritzburg, 29°30'10":30°21'45"E, 22.iii.1988, Londt, 1 000 m, Grassveld (NM); 1 ♂, Howick 2930AC, 1901 (BM); 1 ♂, Gillitts, Pinetown district [2930DD], i.1964, Stuckenberg (NM); 1 ♂ 1 ♀, Pinetown, Leigh (NM); 1 ♂ 1 ♀, Pinetown, 22 23.xii.1908, Leigh (NM); 1 ♂, Pinetown, 22.i.1909, Leigh (ZSM);



Figs 153–157. *Damalis speciosa* Loew. 153–155. ♂ genitalia. 153. Lateral. 154. Ventral. 155. Dorsal. 156. Right mesothoracic tibia and tarsus, anterior aspect. 157. Right metathoracic femur, anterior aspect. 153–157 = ♂ (Umtamvuna Nat. Res.).

2 ♂ 1 ♀, K kloof [Krantskloof 2930DD], i.1915 ii.1915 & iii.1915, Marley (SAM); 2 ♂, Kloof, i.1915, Bell Marley (NM); 1 ♀, Kloof, 11.iv.1960, Nat Museum S Rhodesia (NMZ); 1 ♂, Malvern [2930DD], 3–16 iii.1916, Barker (SAM); 1 ♂ 1 ♀, Malvern, ii. iii.1897, Marshall (BM); 2 ♀, Durban [2931CC], iii.1913 & 1914, Haygarth (SAM); 2 ♀, Durban, iv.1913 1914, Haygarth (ZSM BM); 3 ♀, Umtentweni [30°43'S:30°28'E], 9–14.iii.1961, Capener (NCI); 8 ♂ 5 ♀, Umtamvuna Nat. Res., SE3030CC, 25–27.iii.1985, Londt, open grass forest margin (NM); 2 ♂ 1 ♀, Palm Beach, 3030CC, 14.i.1981, Londt (NM); 1 ♂, Ramsgate, 3030CD, 10–18.i.1981, Londt, dunes (NM); 1 ♂, Josephines Bridge nr Richmond, 3030AA, 8.i.1981, Schoeman (NM).

Distribution: Fairly widespread in Transvaal and Natal, South Africa. (Table 1, Fig. 95).

Type-locality: I here fix the type-locality as Otto's Bluff near Pietermaritzburg.

Biological data: Individuals rest at the tips of bare branches up to a height of some three metres. They appear to prefer clearings in woodland or forest margins. Five prey records are available: 2 *Hemiptera*—Cicadellidae (1), Lygaeidae (1); 3 *Hymenoptera*—Formicidae (2), ? (1). Engel & Cuthbertson (1934) provide a brief note on this species (as *Lophurodamalis speciosa*) as follows 'A common species in the Vumba Mountains and near Umtali in March and April' and say that *simplex* was taken at the same place and season as *speciosa*. I have not seen material from Zimbabwe.

Relationship: Most closely related to *hirtiventris* but also closely related to *simplex*.

***Damalis sphekodes* sp. n.**

Figs 40, 158–163

Etymology: Gr. *sphekodes*—wasp-like. Refers to the constricted, wasp-like abdomen of the species.

Description: Based on holotype ♂ (Tanzania, Amani).

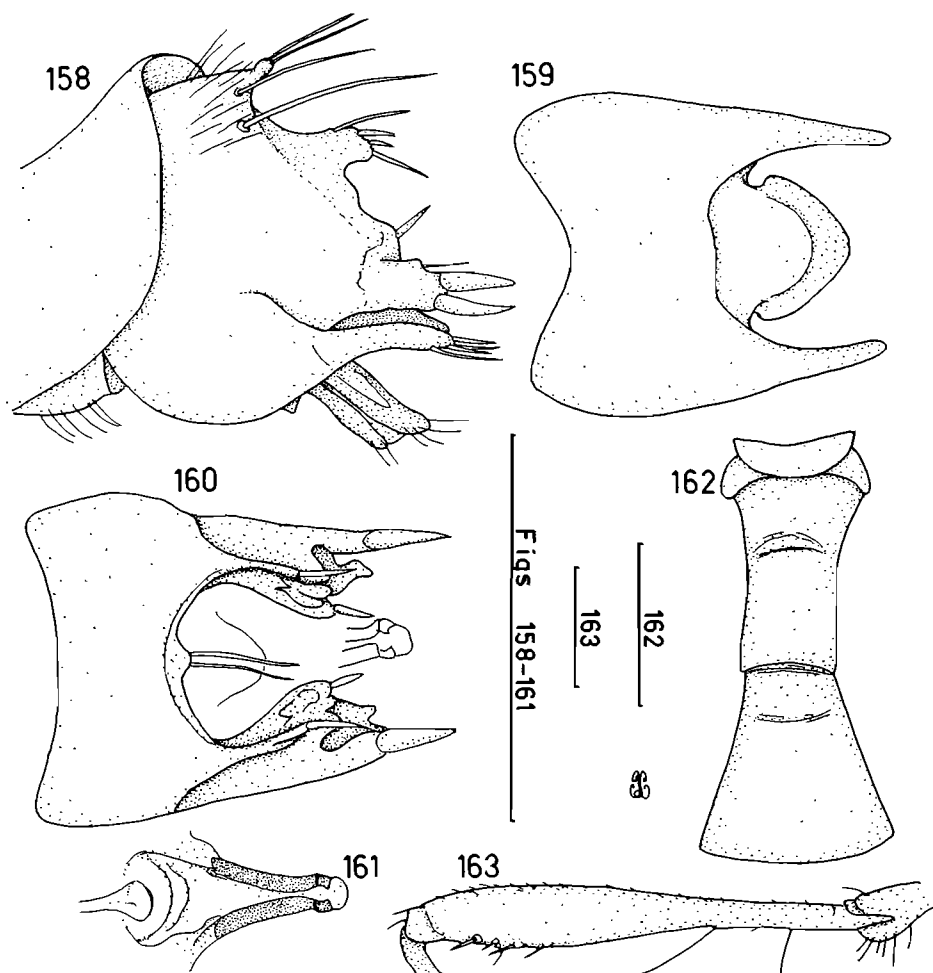
Head: Dark red-brown, fine red-gold pruinose. Antennal setae black; scape lacking ventral and dorsal protuberances; sockets abutting. Eye:face width ratio=1,9. Face flat, lower facial margin depressed; uniformly pruinose. Frons and vertex uniformly pruinose. Mystax composed of 4 black bristles on lower facial margin. Palp dark red-brown; slender fusiform.

Thorax: Sct dark red-brown; uniformly pruinose; gold-red centrally, silver laterally. Pprn lb with shiny apruinose spot; pal cal pruinose; major scutal setae not clearly differentiated. *ca* 6 tiny black marginal sclt s present; sclt uniformly pruinose. Length:height ratio of scutum = *ca* 2,3 (distorted by pin). Postmetacoxal bridge complete. Pleura including anepst and anepm uniform fine silver pruinose. Wing 6,5 × ? mm (wing buckled); microtrichia cover entire surface giving them a brown appearance; venation as for *coeruleiventris* (Fig. 187), right wing has crossvein between R_{2+3} and R_4 ; distal part of R_{2+3} gently curved anteriorly; alula reduced to a narrow strip; membrane uniformly unstained. Halter brown-yellow. Legs yellow-brown, anterior aspects red-brown; mesothoracic leg lacking processes; fem 3 = 3,1 mm (Fig. 163).

Abdomen: T1 dark brown, others brown-yellow; apruinose; setae short dark red-brown. Sterna brown-yellow; fine silver pruinose; setae sparse, yellow. Abdomen petiolate (T2 & T3 constricted—Fig. 162). Genitalia (Figs 158–161); epand proximally completely fused with somewhat reduced hypd; aed short with fairly slender distal section; cerci completely fused; hypcrt clearly extending beyond cerci.

Variation: ♂ similar to ♀.

Material examined: TANZANIA: 1 ♂ (holotype), Amani [5°09'S:38°36'E], iii.1959, J. D. Phipps (BM). ZAÏRE: 1 ♂ 1 ♀ (paratypes), 13 mi S of Fizi [4°18'S:28°57'E], 11.i.1958, E. S. Ross & R. E. Leech, 1 300 m (CAS).



Figs 158–163. *Damalis sphekodes* sp. n. 158–163. ♂ genitalia; 158. Lateral. 159. Ventral. 160. Dorsal. 161. Aedeagus, dorsal. 162. Abdominal terga 1–3. 163. Right metathoracic femur, anterior aspect. 158–161 163 = ♂ holotype (Amani); 162 = ♀ paratype (Amani).

Distribution: Tanzania and eastern Zaïre (Table 1, Fig. 40).

Biological data: Nothing known.

Relationship: Most closely related to *coeruleiventris* and more distantly to *scutellata*.

***Damalis turneri* sp. n.**

Figs 61, 164–169, 211

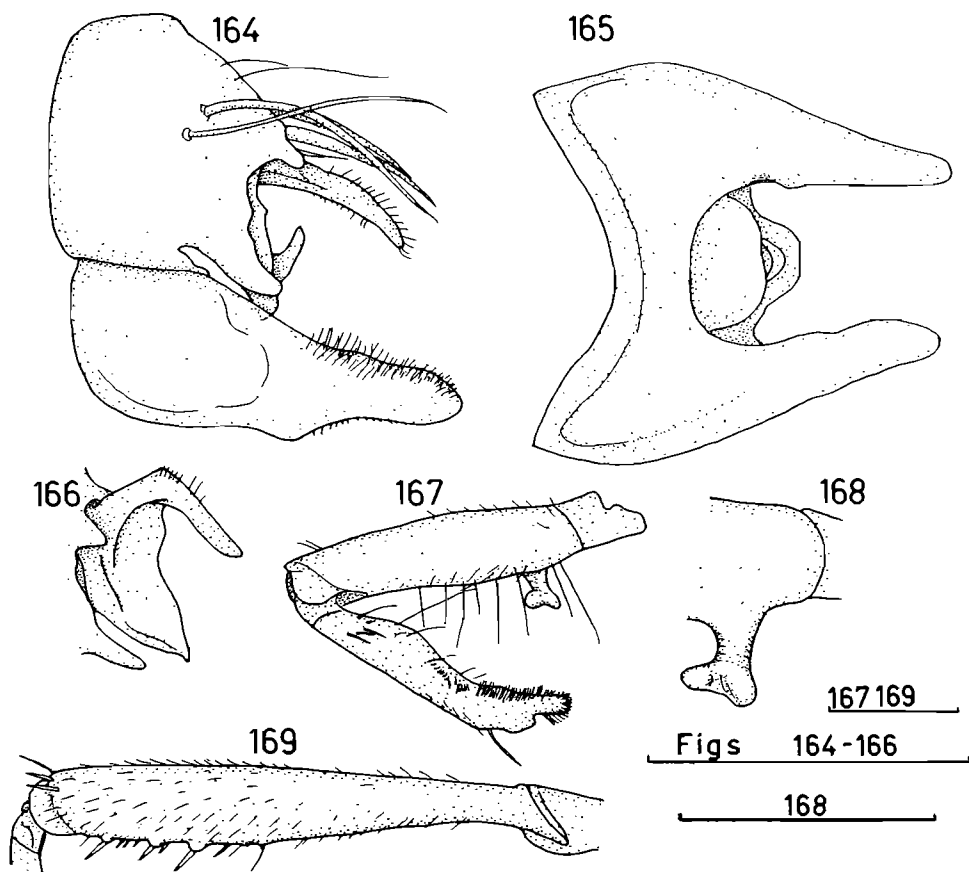
Etymology: Named after R. E. Turner who collected the type specimens.

Description: Based on holotype ♂ (South Africa, Katberg).

Head: Black, silver pruinose. Antennal setae black and yellow; scape with moderately well-developed ventral and dorsal protuberances; sockets abutting.

Eye: face width ratio = 1,9. Lower half of face slightly gibbose and shiny apruinose. Frons and vertex uniformly pruinose. Mystax composed of many black (few yellow on margin) bristles on lower half of face; upper half with short upwardly directed setae. Palp black; slender fusiform.

Thorax: Sct black; uniformly silver pruinose; Pprn lb and pal cal uniformly pruinose; major scutal setae weak black, not clearly differentiated. 4 black sctl s; sctl pruinose hind margin hidden from view (paratype ♀ has central part of margin apruinose). Length: height ratio of scutum = 2,1. Posterior margins of metepimera extended slightly posteromedially (Fig. 4). Pleura silver pruinose except for upper hind corner of anepst which is shiny apruinose. Wing $7,5 \times - 2,8$ mm; microtrichia cover entire surface; venation (Fig. 211—paratype ♀) yellowish anteriorly; R_{2+3} straight; membrane uniformly unstained. Halter brown-yellow. Legs black, tibiae and proximal and distal ends of femora brown-yellow; mesothoracic leg with fem and tib processes (Figs 167–168) cx process weak; fem $3 = 3,8$ mm (Fig. 169).



Figs 164–169. *Damalis turneri* sp. n. 164–166. ♂ genitalia. 164. Lateral. 165. Ventral. 166. Gonocoxite. 167. Left mesothoracic leg showing femoral and tibial processes, posterior aspect. 168. Right mesothoracic femoral spur. 169. Right metathoracic femur, anterior aspect. 164–169 = ♂ holotype (Katberg).

Abdomen: Terga black; except for narrow posterior margin silver pruinose; setae short shiny white. Sterna similar but shiny apruinose anteromedially (T2–3). Genitalia (Figs 164–166); epand lobes joined by narrow bridge; goncx leaf-like with dorsal downwardly directed finger-like process; cerci not completely fused distally; hypcrt as long as cerci.

Variation: ♂ similar to ♀.

Material examined: SOUTH AFRICA: *Cape Province*: 1 ♂ 1 ♀ (holotype & paratype), Katberg [3226BC], 19–26.ii.1933, R. E. Turner (BM); 1 ♂ (paratype), Grahamstown [3226BC], 19.iii.1921, H. K. Munro (SIW).

Distribution: Known only from the Grahamstown area of the eastern Cape (Table 1, Fig. 61).

Biological data: Nothing known.

Relationship: Closely related to *doryphorus*, *femoralis* and *monochaetes*.

Damalis venustus Bertoloni 1861, **stat. rev.**

Figs 123, 170–175, 212–213

Damalis venustus Bertoloni, 1861: 28; Bertoloni, 1862: 49; Kertész, 1909: 95; Hull, 1962: 55.

Xenomyza venusta; Oldroyd, 1974: 127; Oldroyd, 1980: 372.

Damalis brauni Speiser, 1924: 146 **syn. n.**

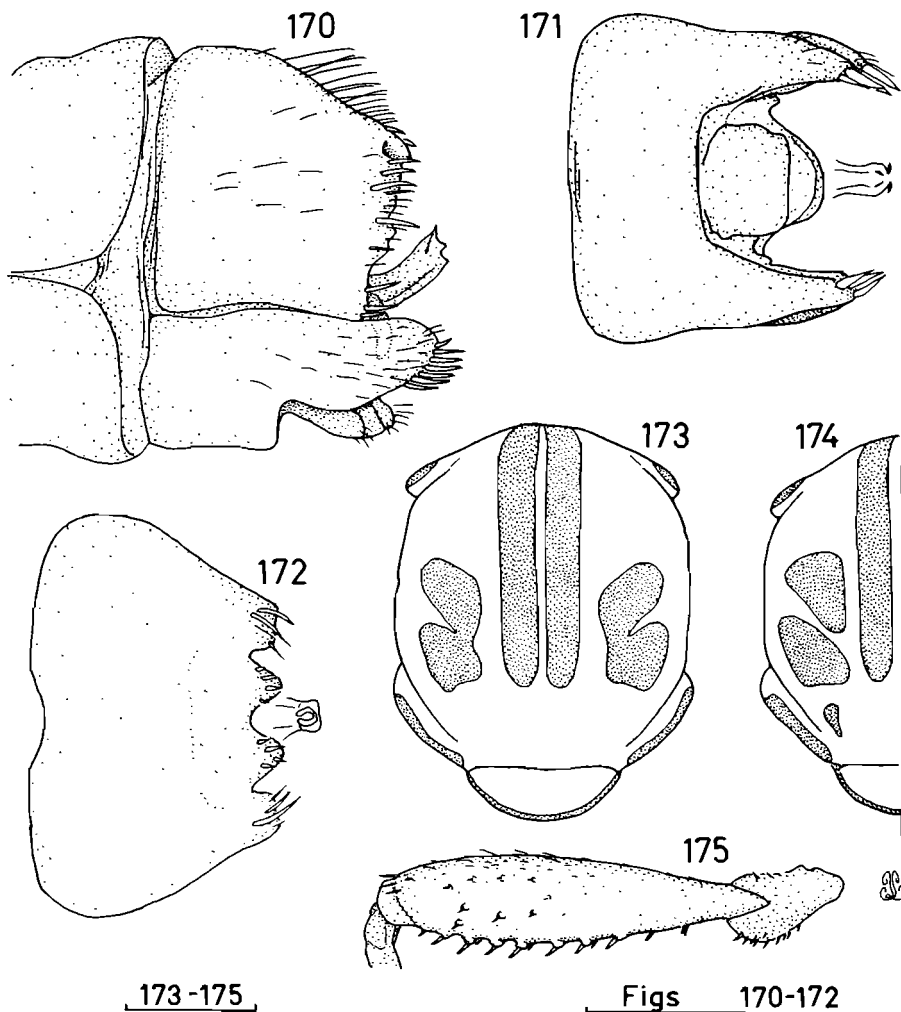
Xenomyza brauni; Oldroyd, 1980: 372.

Redescription: Based on unique holotype ♀ (Mozambique, Inhambane) unless otherwise stated.

Head: Dark red-brown, silver pruinose except where noted. Antennal setae short dark red-brown; scape lacking protuberances; sockets abutting. Eye: face width ratio = 1,8. Face flat, lower facial margin depressed; uniformly pruinose except for lower facial margin. Frons and vertex uniformly pruinose. Mystax composed of ca 10 pale yellow bristles confined to lower facial margin. Palp dark-brown; slender fusiform.

Thorax: Sct dark red-brown to black centrally, yellow-brown laterally; silver pruinose except for apruinose pattern (Fig. 173—Jozini ♀ illustrated as type has pin damage in posterior part). Pprn lb with shiny apruinose spot; pal cal entirely shiny apruinose; major scutal setae small, not clearly differentiated. Scutellum obliterated by pin; in other specimens sctl s minute (considered absent); sctl mostly apruinose except for anterior silver pruinose strip. Length: height ratio of scutum = 1,8. Postmetacoxal bridge complete. Pleura except for parts of anepst and anepm silver-gold pruinose. Wing 6,5 × 2,7 mm; microtrichia absent except for anterior part of stained area; venation (Fig. 212—5 km SW Jozini ♀); distal part of R₂₊₃ bent fairly strongly anteriorly; membrane brown-stained basally (from about level of r-m crossvein). Halter brown-yellow. Legs brown-yellow, femora with tips dark red-brown anteriorly and posteriorly; mesothoracic leg lacking processes; fem 3 = 2,8 mm (Fig. 175).

Abdomen: Terga brown-yellow except for T1 which is brown; entirely shiny apruinose; setae short yellow. Sterna similar but fine silver pruinose except for lateral parts; setae sparse, pale yellow.



Figs 170–175. *Damalis venusta* Bertoloni. 170–172. ♂ genitalia. 170. Lateral. 171. Ventral. 172. Dorsal. 173–174. Pruinescence pattern of scutum. 175. Right metathoracic femur, anterior aspect. 170–173, 175 = ♂ (5 km SW Jozini); 174 = ♂ (Kosi Bay Nat. Res.).

Variation: ♂ similar to ♀; wing coloration more extensive in ♂ (Fig. 213). ♂ genitalia (Figs 170–172—Jozini ♂); hypd with pair seta bearing lobes medially; cerci completely fused and moderately truncate distally; hypcrct extending slightly beyond cerci, also somewhat truncate. Slight difference in scutal pattern seen in some individuals (Fig. 174).

Material examined: MOZAMBIQUE: 6 ♂ (1 defective) 6 ♀, Masiene P E Afr [? Masiuene 16°24'S:39°53'E], xii.1923, Lawrence (SAM); 1 ♀ (holotype), Misit Eq. Fornasini, Ex Inhambane [23°51'S:35°29'E], 1845 (IZB); 1 ♀, Inhambane, P E Afr, i.1924, Lawrence, Brit. Mus. 1932–464 (BM); 3 ♂, Inhambane, P E Afr, i.1924, Lawrence (SAM); 1 ♂, Del. B. [Delagoa Bay = Maputo 25°58'S:32°35'E],

86 20 (BM); 2 ♂ 6 ♀, Nyaka, P E Afr [Inhaca 26°01'S:32°58'E], ii.1924, Lawrence (SAM). SOUTH AFRICA: *Transvaal*: 2 ♀, Lake Funduzi [22°15'S:30°19'E], 23.i.1931, v Son (NM). *Natal*: 3 ♀ (allotopotype & paratopotypes—*pulchella* Bromley), Manguzi River nr. Maputa, Z. [2632DD], xi–xii.1945, H. Bell Marley (DM); 2 ♀ (paratopotypes—*pulchella* Bromley), Manguzi River nr. Maputa, Z., xi–xii.1945, H. Bell Marley (SIW); 1 ♂ 1 ♀, Kosi Bay Nat. Reserve, 2632DD, 30.xi–2.xii.1982, Londt Barraclough & Stuckenberg, Forest and open woodland areas (NM); 1 ♂, 4 mi S Ndumu Game Res. Camp (2632CC), 1.xii.1971, Irwin, dry scrub forest, 160 ft (NM); 2 ♀, Ndumu Game Reserve, 2632CC, 26.x.1972, M. E. Irwin (NM); 4 ♂ 6 ♀, 5 km SW of Jozini, 2732AC, 3.xii.1982, Londt Stuckenberg & Barraclough, Ubombos (NM). TANZANIA: 1 ♂ 3 ♀, Singida [4°45'S:34°45'E], 26.i.1970, M. E. Irwin & Ross, 4 900 ft (CAS); 1 ♀, 19 [incomplete date], Ex Coll W. H. Potts, 1967—472 (BM).

Distribution: Tanzania, Mozambique and northern Natal, South Africa (Table 1, Fig. 123).

Synonymy: The type material of Speiser's *brauni* cannot be traced. The description suggests that he was dealing with specimens of *venustus*.

Biological data: I have captured this species in moderately long grass in relatively open landscapes. They fly rapidly over and around grass tussocks.

Relationships: Most closely related to *pulchella* but also related to *neavei*, *angola* and *poseidon*.

***Damalis xaniomerus* sp. n.**

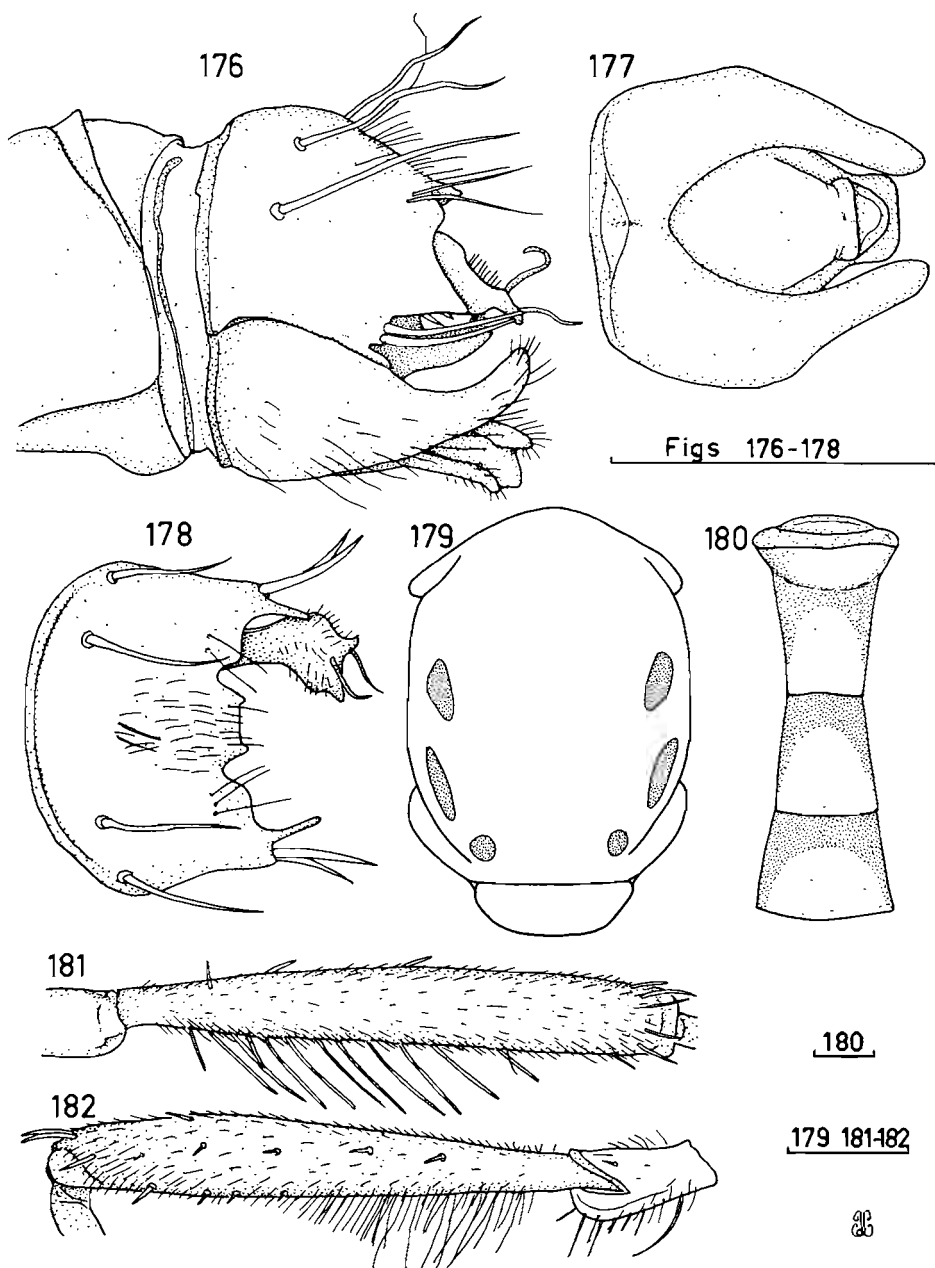
Figs 88, 176–182, 214

Etymology: Gr. *xanion*—comb; *meros*—thigh (femur). Refers to the row of strong bristles on hind femora.

Description: Based on holotype ♂ (South Africa, Klip Vlei) unless otherwise stated.

Head: Dark red-brown, central parts brown-yellow; silver pruinose. Antennal setae white (except for 1 black bristle); scape poorly developed ventral protuberance; sockets abutting. Eye:face width ratio=2,2. Face gibbose in lower region; uniformly pruinose. Frons and vertex uniformly pruinose. Mystax composed of many black bristles and smaller white setae occupying lower two-thirds of face. Palp yellow; slightly bulbous.

Thorax: Sct dark red-brown to black centrally, yellow-brown laterally; silver pruinose except for small areas (Fig. 179). Pprn lb and pal cal pruinose; major scutal setae quite well developed, black. 4 strong black sctl s; sctl uniformly pruinose. Length:height ratio of scutum = ca 2,1. Posterior margins of metepimera extended posteromedially to the point where they touch but are not clearly fused together (as in Fig. 6). Pleura including anepst and anepm uniform fine silver pruinose. Wing 8,3×2,5 mm; microtrichia cover entire surface except for anterior half of cell cup; venation (Fig. 214—paratype ♂ Klip Vlei); distal part of R₂₊₃ gently curved anteriorly; membrane weakly brown-stained along veins. Halter



Figs 176-182. *Damalis xaniomerus* sp. n. 176-178. ♂ genitalia. 176. Lateral. 177. Ventral. 178. Dorsal. 179. Pruinescence pattern of scutum. 180. Abdominal terga 1-4, dorsal, showing slight constriction. 181-182. Right metathoracic femur. 181. Dorsal, showing comb of setae. 182. Anterior. 176-179, 181 = ♂ paratype (Klip Vlei); 180 = ♀ paratype (Citrusdal Dist.); 182 = ♂ holotype (Klip Vlei).

yellow-brown. Legs brown-yellow; femora and tibiae red-brown anteriorly; mesothoracic leg lacking processes; fem 3 with row of 9–10 long black evenly spaced bristles posteriorly (Fig. 181); fem 3 = 4,4 mm (Fig. 182).

Abdomen: Terga dark red-brown to black; each tergum silver pruinose except for posterodorsal shiny apruinose area; setae short black and white. Sterna yellow-brown with small apruinose median spot near posterior margin. Genitalia (Figs 176–178—Klip Vlei paratype ♂); epand lacking cluster of setae distally; hypd short with triangular flange on distal margin; goncx elongate with processes and setae distally; cerci almost completely fused; hypcrt extending slightly beyond cerci.

Variation: ♂ similar to ♀. Citrusdal specimens appear to have somewhat constricted petiolate abdomen (Fig. 180). In other respects they are entirely similar.

Material examined: All specimens paratypes except for holotype. SOUTH AFRICA: *Cape Province:* 1 ♂ (holotype) 1 ♂ 3 ♀, Klip Vlei, Garies [3018AC], Namaqualand, xi.1931, Museum Staff (SAM NM); 3 ♂ 2 ♀, Bowesdorp [30°09'S:17°52'E], Namaqualand, xi.1931, Museum Staff (SAM); 1 ♂ 1 ♀, Citrusdal Distr. [3219CA], xi.1948, Mus. Exp. (SAM). NM Type No. 11.

Distribution: Namaqualand, South Africa (Table 1, Fig. 88).

Biological data: Nothing known.

Relationship: Most closely related to both *annulata* and *conspicua*.

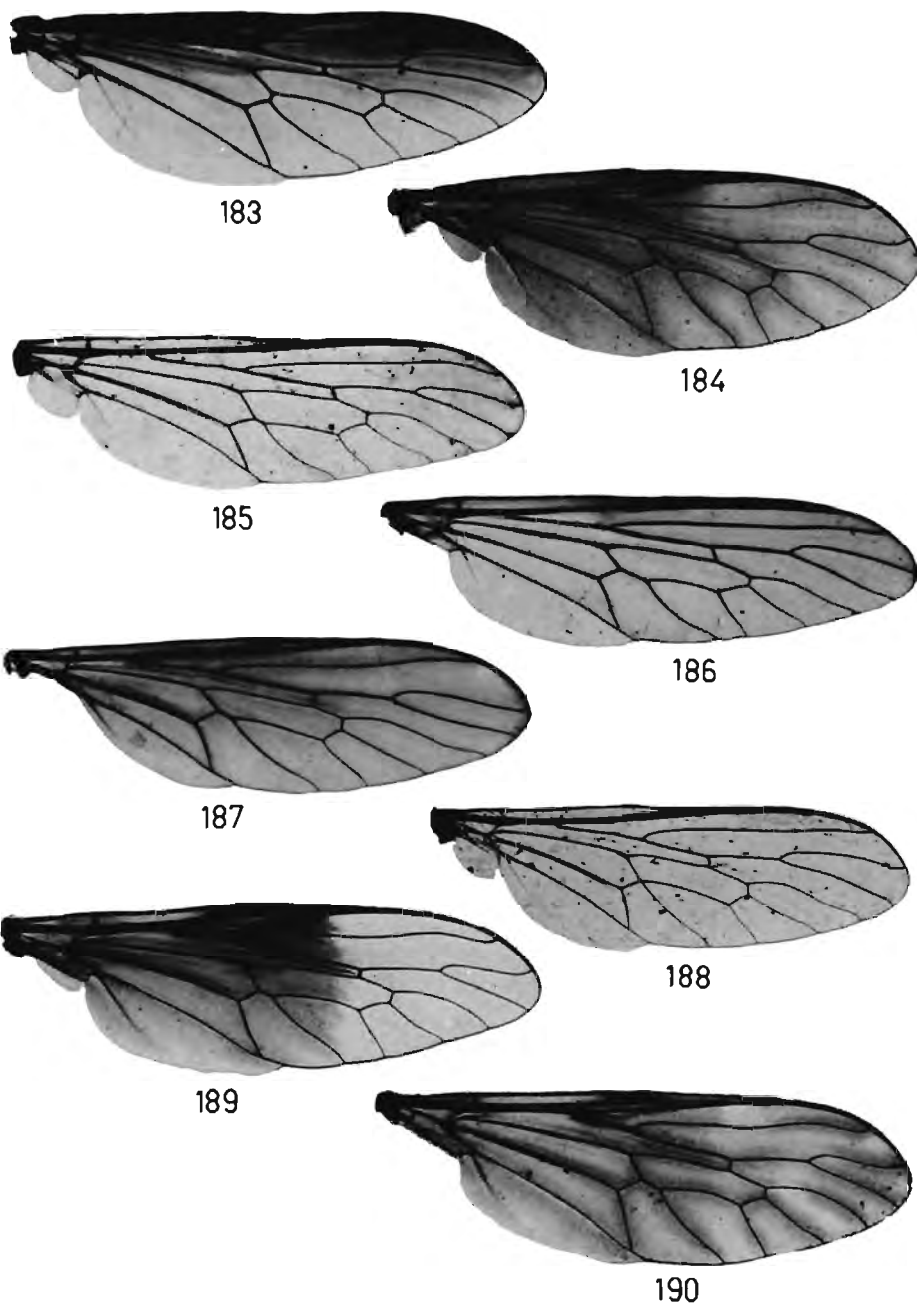
DISCUSSION

Distribution of subsaharan Afrotropical *Damalis* species

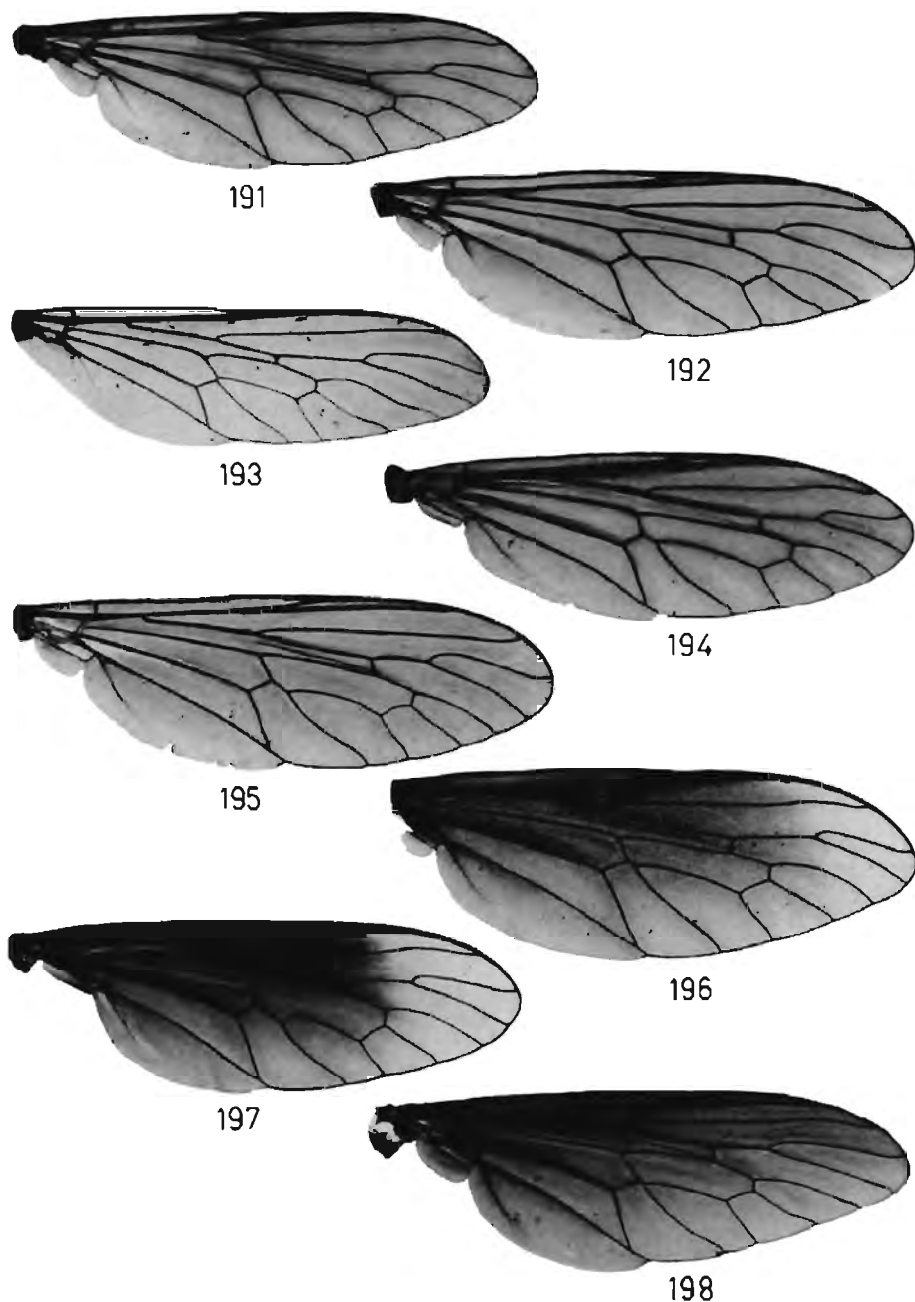
Subsaharan *Damalis* species are found from the southernmost tip of South Africa northwards to approximately latitude 10° N (Fig. 215). Although it appears that the distribution of many tropical species is strongly correlated with forests, there is little definite evidence to suggest that these species actually live in forest. One widely spread species (*pollinosa*) was collected by me in grassland adjacent to forest in Malaŵi.

This association with forests is not perhaps as evident south of the Tropic of Capricorn although a few species are apparently confined to indigenous forest (ie. *chelomakolon*, *knysna* and *longipennis*). Other southern African species are, however, found in long grass adjacent to indigenous forest patches (eg. *femoralis*, *monochaetes*, *doryphorous* and probably *turneri* as well as *speciosa*, *hirtiventris*, and *simplex*). One group of primarily tropical species (including *angloa*, *neavei*, *poseidon*, *pulchella* and *venustus*) is also apparently associated with grass in savannah. Three of these species (*neavei*, *pulchella* and *venustus*) extend down the east coast of Africa into the subtropical parts of southern Africa (north-eastern coastal areas of Natal) where they have been collected in shortish grass in forest and savannah mosaic.

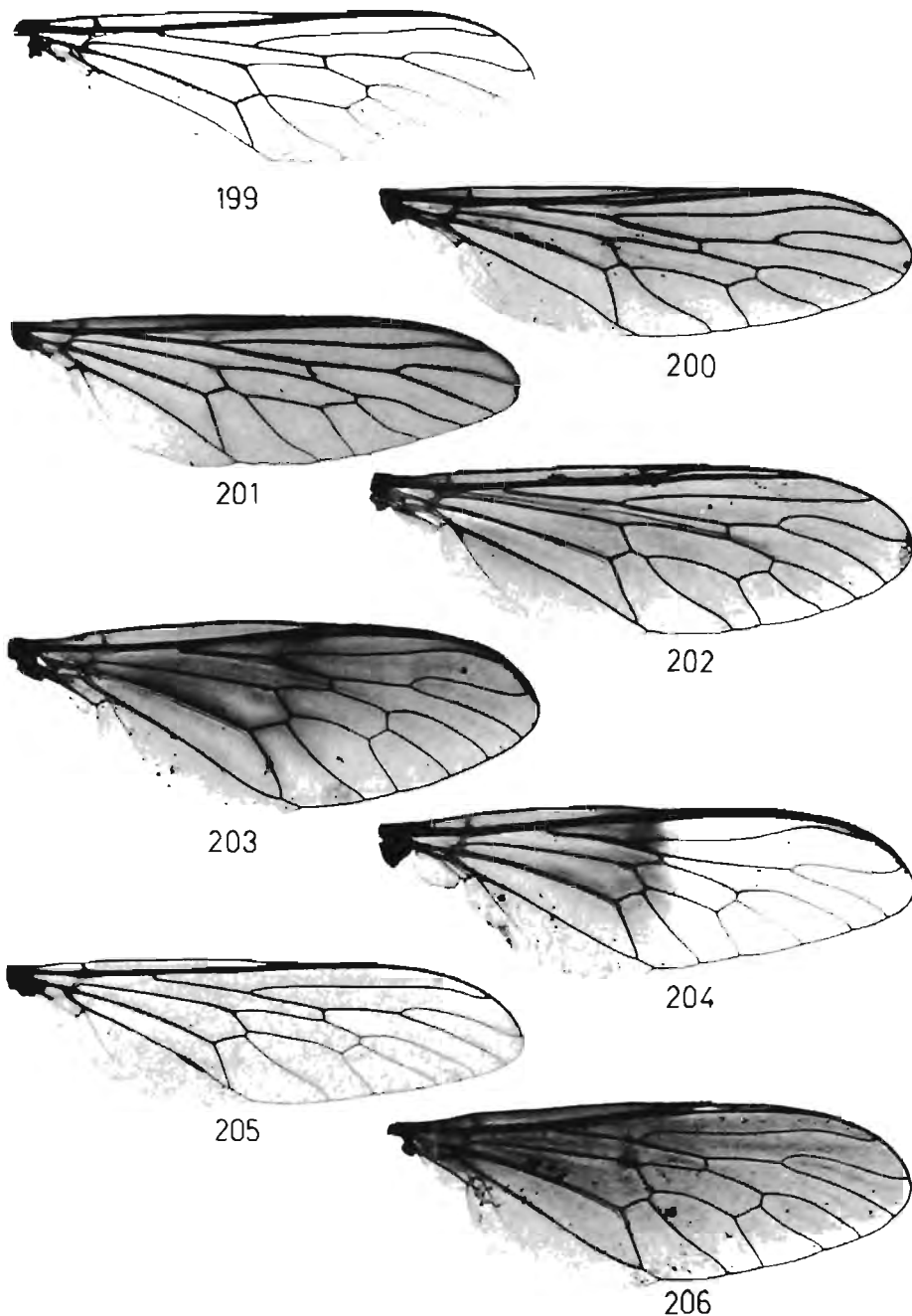
A number of southern African species (including *annulata*, *conspicua*, *xaniomerus*, *furcula*, *cylindrica*, *heterocera*, and probably *elongatus*) have apparently become adapted to more arid habitats. Most of these species live in grass or macchia vegetation in the mediterranean region of the south-western Cape Province and probably do not require the presence of trees.



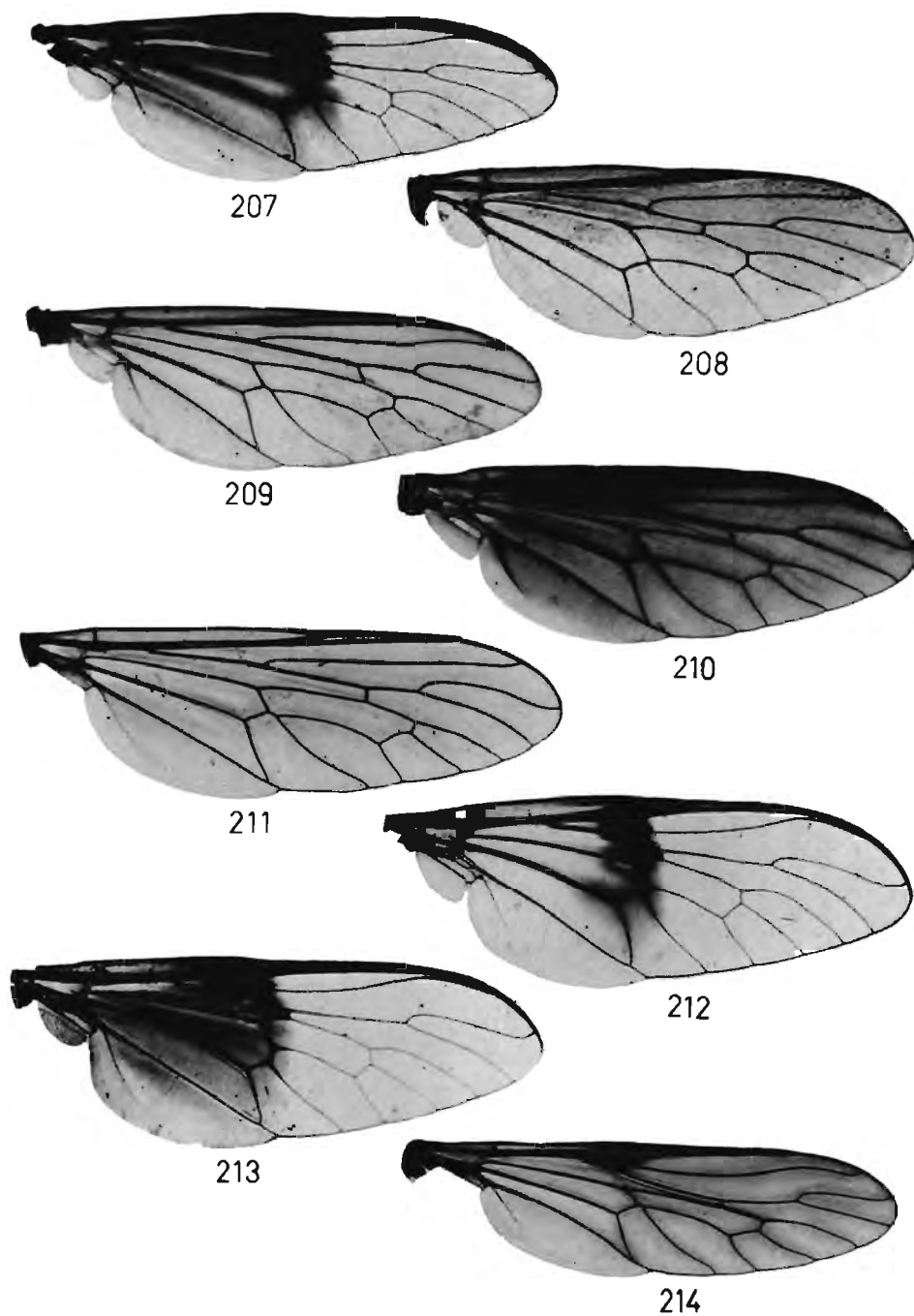
Figs 183–190. *Damalis* species, wing venation. 183. *angola* ♂ (paratype, Brucio). 184. *annulata* ♂ (Brenton on Sea). 185. *achilles* ♀ (paratype, Tongaat). 186. *chelomakolon* ♀ (paratype, Umtali Dist., Vumba). 187. *coeruleiventris* ♀ (Ekok). 188. *complexa* ♀ (Ile Ife). 189–190. *conspicua* (Klawer). 189. ♂. 190. ♀.



Figs 191–198. *Damalis* species, wing venation. 191. *cylindrica* ♀ (Franschhoek Pass). 192. *doryphorus* ♀ (paratype, Berlin Falls). 193. *drilus* ♀ (paratype, 7 mls from Entebbe). 194. *elongatus* ♂ (Willow Grange). 195. *femoralis* ♂ (Cathedral Peak). 196. *furcula* ♀ (paratype, Du Toits Kloof). 197. *heterocera* ♂ (Cape Town). 198. *hirtiventris* ♀ (Dukuduku).



Figs 199–206. *Damalis* species, wing venation. 199. *hyalipennis* ♂ (Stella Bush). 200. *knysna* ♀ (paratype Stormsrivier Pass). 201. *longipennis* ♀ (Balgowan). 202. *monochaetes* ♂ (Mkomanzi riv. valley). 203–204. *neavei* paratypes. 203. ♂ (Blantyre). 204. ♀ (Marimba). 205. *pollinosa* ♀ (Viphya Mts., Chikangawa). 206. *poseidon* ♀ (paratype, Elisabethville).



Figs 207–214. *Damalis* species, wing venation. 207. *pulchella* ♀ (Lake St Lucia). 208. *scutellata* ♂ (Ejura). 209. *simplex* ♀ (Chimanimani Mts). 210. *speciosa* ♂ (Umtamvuna). 211. *turneri* ♀ (paratype, Katberg). 212–213. *venustus* (Jozini). 212. ♀. 213. ♂. 214. *xaniomerus* ♂ (paratype, Klip Vlei, Garies).

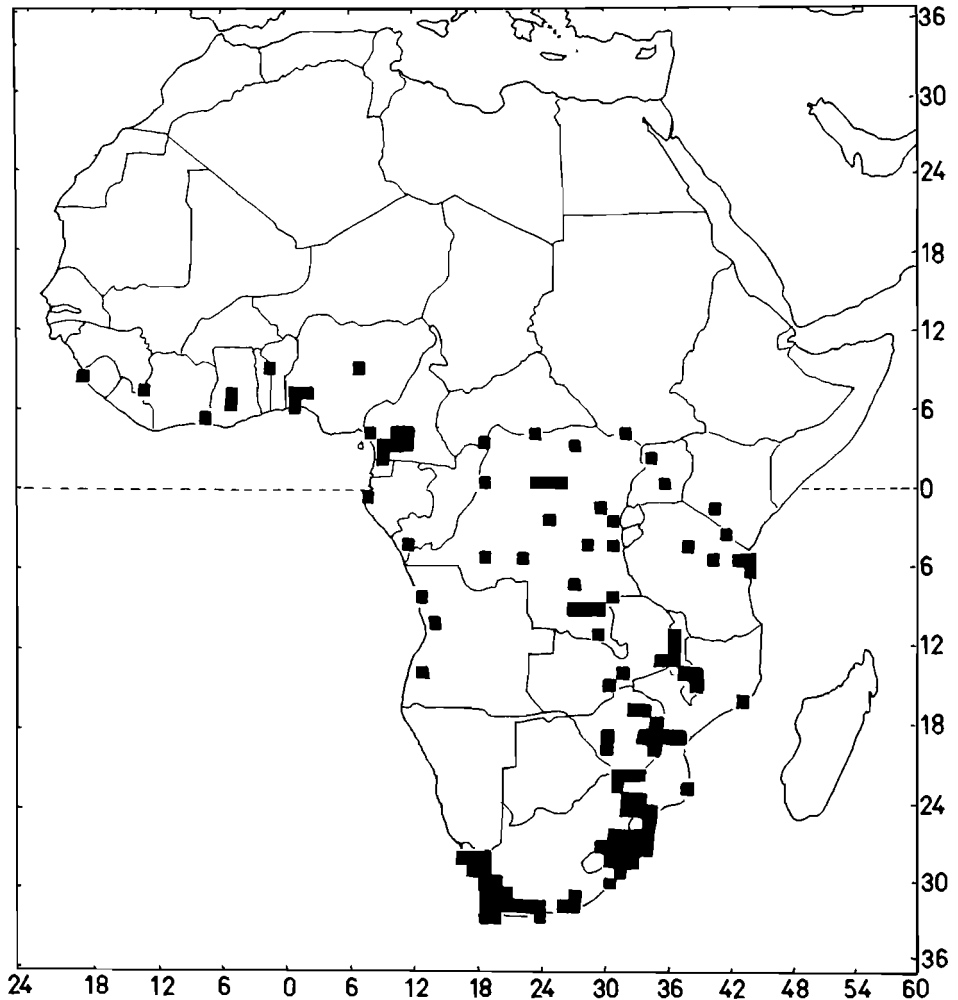


Fig. 215. The distribution of *Damalis* species in Africa.

Seasonal occurrence of subsaharan *Damalis* species

Most *Damalis* species covered in this study are active as adults during summer (Table 2). The few species which extend north of the equator (including *complecta*, *pollinosa*, *scutellata* and *coeruleiventris*) are probably available for collection as adults throughout the year. Most other African species fall into three categories:

- (i) Early summer flyers: These are primarily the species of the southwestern Cape Province of South Africa including *annulata*, *conspicua*, *cylindrica*, *furcula*, *heterocera* and probably *xaniomerus*.
- (ii) Midsummer flyers: These are the more tropical species such as *angola*, *neavei*, *poseidon*, *pulchella* and *venusta* and possibly also *chelomakolon*, *hirtiventris*, *hyalipennis*, *speciosa* and *simplex*.

(iii) Late summer flyers: These are the species of the more temperate eastern parts of southern Africa. Most appear to inhabit forests or long grass bordering forest patches. Species in this group include *doryphorus*, *elongatus*, *femoralis*, *hirtiventris*, *monochaetes* and *turneri*.

Species not included in these lists are too poorly known to categorise.

Prey of subsaharan *Damalis* species

I have accumulated 65 prey records for three Natal (South Africa) species (*femoralis*, *monochaetes*, *speciosa*) at the Natal Museum (included in a computerised data base). The only other unpublished prey items known to me are nine specimens pinned together with specimens of *D. neavei* from Malaŵi (in BM). A complete list of all this material is given as Table 3.

It appears that *Damalis* has a wide range of prey. Small Hymenoptera, especially Formicidae (alates in all instances) accounted for some 39% of all prey. The other two more commonly encountered prey families were the Staphylinidae and the Cicadellidae. All prey items, with the exception of the heteropodid spider, were winged. Although this suggests that *Damalis* may take its prey on the wing I suspect that they may frequently dart at and capture insects which alight on grass stalks (all records relate to species inhabiting grass).

ACKNOWLEDGEMENTS

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TABLE 1
Distribution of *Damalis* in Africa

Species	West									Central	East				Southern								
	Guinea	Sierra Leone	Liberia	Ivory Coast	Ghana	Benin	Nigeria	Cameroun	Central African Republic	Zaire	Angola	Zambia	Uganda	Kenya	Tanzania	Malawi	Mozambique	Zimbabwe	South Africa	Transvaal	Natal	Cape Province	Transkei
achilles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
angola	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
annulata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
chelomakolon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
coeruleiventris	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
complexa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
conspicua	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cylindrica	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
doryphorus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
drilus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
elongatus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
femoralis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
furcula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
heterocera	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
hirtiventrus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
hyalipennis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
knysna	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
longipennis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
monochaetes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
neavei	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pollinosa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
poseidon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pulchella	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
scutellata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
simplex	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
speciosa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
sphekodes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
turneri	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
venustus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
xaniomerus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. species	1	1	1	2	2	1	4	4	3	5	1	2	2	1	3	4	5	5	21	6	12	10	1

TABLE 2
Seasonal occurrence of *Damalis* in Africa.
Months of the year

Species	J	F	M	A	M	J	J	A	S	O	N	D
achilles	•	—	—	—	—	—	—	—	—	—	—	•
angola	—	•	•	—	—	—	—	—	—	—	•	•
annulata	•	•	•	—	—	—	—	•	•	•	•	•
chelomakolon	•	•	•	—	—	—	—	—	—	—	•	—
coeruleiventris	—	—	—	•	•	•	—	—	•	•	•	•
complecta	•	•	•	•	—	•	•	•	•	•	•	•
conspicua	—	—	—	—	—	—	—	—	•	•	•	—
cylindrica	•	•	—	—	—	—	—	—	•	—	•	•
doryphorus	—	•	•	•	—	—	—	—	—	—	—	—
drilus	—	—	•	•	—	—	—	—	—	—	—	—
elongatus	—	•	•	•	•	—	—	—	—	—	—	—
femoralis	•	•	•	•	—	—	—	—	—	—	—	—
furcula	—	—	—	—	—	—	—	—	•	•	•	•
heterocera	—	—	—	—	•	—	—	•	•	•	•	•
hirtiventris	•	—	•	•	•	—	—	—	—	•	•	•
hyalipennis	•	•	•	—	•	—	—	—	—	—	•	•
knyrna	—	•	—	—	—	—	—	—	—	—	—	•
longipennis	—	•	•	—	—	—	—	—	—	—	—	—
monochaetes	—	•	•	•	—	—	—	—	—	—	—	—
neavei	•	•	•	—	—	—	—	—	—	•	—	•
pollinosa	•	•	•	•	•	•	•	•	•	•	•	•
poseidon	•	—	—	—	—	—	—	—	—	—	—	•
pulchella	•	—	—	—	—	—	—	—	—	•	•	•
scutellata	—	—	•	•	•	—	•	•	•	—	•	—
simplex	—	•	•	—	—	—	—	—	•	—	—	—
speciosa	•	•	•	•	•	—	—	—	—	—	—	•
sphekodes	•	—	•	—	—	—	—	—	—	—	—	—
turneri	—	•	•	—	—	—	—	—	—	—	—	—
venustus	•	•	—	—	—	—	—	—	—	•	•	•
xaniomerus	—	—	—	—	—	—	—	—	—	—	•	—
No. species	15	18	19	12	8	3	3	5	10	11	16	17

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TABLE 3
Prey of *Damalis* species

Order	Total	%	Family	No.	%
Hymenoptera	29	39	Formicidae	21	28
			Platygastridae	2	3
			Halictidae	1	1
			Ichneumonidae	1	1
			? Torymidae	1	1
			?	3	4
Coleoptera	16	21	Staphylinidae	10	13
			Chrysomelidae	2	3
			? Scarabaeidae	1	1
			?	3	4
Hemiptera	16	21	Cicadellidae	8	11
			Lygaeidae	4	5
			Aphididae	1	1
			Membracidae	1	1
			Miridae	1	1
			? Anthocoridae	1	1
Diptera	10	13	Empididae	3	4
			Phoridae	1	1
			Tipulidae	1	1
			Ceratopogonidae	1	1
			Culicidae	1	1
			Sphaeroceridae	1	1
			? Lauxaniidae	1	1
			?	1	1
Lepidoptera	1	1	Olethreutidae	1	1
Thysanoptera	1	1	Phlaeothripidae	1	1
Psocoptera	1	1	Psyllipsocidae	1	1
Araneida	1	1	Heteropodidae	1	1
Total	75	98			

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Date received: 31 October 1988

INDEX TO SPECIES OF *DAMALIS* HANDLED IN THIS STUDY

(Names in italics are synonyms of the species indicated)

<i>Species</i>	<i>Page</i>	<i>Species</i>	<i>Page</i>
<i>achilles</i> sp. n.	65	<i>imbuta</i> Walker (= <i>hirtiventris</i>)	
<i>amphora</i> Oldroyd (= <i>coeruleiventris</i>)		<i>knysna</i> sp. n.	104
<i>angola</i> sp. n.	67	<i>longipennis</i> Loew	105
<i>annulata</i> Loew	69	<i>maxima</i> Hermann (= <i>pollinosa</i>)	
<i>anomalus</i> Wiedemann (= <i>heterocera</i>)		<i>monochaetes</i> sp. n.	107
<i>brauni</i> Speiser (= <i>venustus</i>)		<i>natalensis</i> Curran (= <i>hirtiventris</i>)	
<i>capensis</i> Wiedemann (= <i>heterocera</i>)		<i>neavei</i> sp. n.	109
<i>chelomakolon</i> sp. n.	72	<i>pallinota</i> Hermann (= <i>pollinosa</i>)	
<i>coeruleiventris</i> (Enderlein)	74	<i>pollinosa</i> Ricardo	113
<i>complecta</i> (Oldroyd)	77	<i>poseidon</i> (Oldroyd)	118
<i>conspicua</i> Curran	79	<i>pulchella</i> Bromley	120
<i>cylindrica</i> Hull	81	<i>scutellata</i> (Oldroyd)	122
<i>doryphorus</i> sp. n.	83	<i>simplex</i> Curran	124
<i>drilus</i> sp. n.	86	<i>speciosa</i> Loew	125
<i>elongatus</i> Hull	88	<i>sphekodes</i> sp. n.	128
<i>femoralis</i> Ricardo	89	<i>taciturna</i> Oldroyd (= <i>pollinosa</i>)	
<i>furcula</i> sp. n.	92	<i>turneri</i> sp. n.	129
<i>heterocera</i> (Wiedemann)	95	<i>venustus</i> Bertoloni	131
<i>hirtiventris</i> Macquart	98	<i>xaniomerus</i> sp. n.	133
<i>hyalipennis</i> Macquart	100		